United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Tennessee Agricultural Experiment Station; Tennessee Department of Agriculture; United States Department of Agriculture, Forest Service; and Sevier County Board of Commissioners

Soil Survey of Sevier County Area, Tennessee

How To Use This Soil Survey

The information provided in this publication can be useful in planning the use and management of small areas. The text includes descriptions of detailed soil map units and provides an explanation of the information presented in the tables, or soil reports, which are available via the Web Soil Survey of the Natural Resources Conservation Service (accessible from the Soils Web site at http://soils.usda.gov). The publication also includes a glossary of terms used in the text and tables and a list of references.

Bookmarks and links in the publication allow the user to navigate from one part of the text to another. Maps showing soil lines and map unit symbols can be accessed for a particular area of interest through Web Soil Survey (by clicking on the “Soil Map” tab). The symbols on the maps represent the detailed soil map units in the area. These map units are listed in the bookmarks panel of the text. Information about the map units can be accessed by clicking on the appropriate bookmark.

The bookmarks panel of the text outlines the contents of this publication.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1993. Soil names and descriptions were approved in 2001. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1993. This soil survey was made cooperatively by the Natural Resources Conservation Service; the Tennessee Agricultural Experiment Station; the Tennessee Department of Agriculture; the United States Department of Agriculture, Forest Service; and the Sevier County Board of Commissioners. The survey is part of the technical assistance furnished to the Sevier County Soil Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Cover: Farming operations are still common in the mountain valleys of Sevier County. Rosman soils on the nearly level bottom in the foreground and Braddock soils on the footslopes beyond the buildings are used for hayland and pasture. The soils on the mountains in the background are in the Cataska-Junaluska-Sylco general soil map unit.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service home page on the World Wide Web. The address is http://www.nrcs.usda.gov.

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Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations that affect various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

James E. Ford
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Sevier County Area, Tennessee

By Clarence T. Conner, Natural Resources Conservation Service

Fieldwork by Clarence T. Conner and Richard L. Livingston, Natural Resources Conservation Service, and Arthur G. Dunn, Sevier County Soil Scientist

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
Tennessee Agricultural Experiment Station; Tennessee Department of Agriculture; United States Department of Agriculture, Forest Service; and Sevier County Board of Commissioners

SEVIER COUNTY is located in eastern Tennessee (fig. 1). The physiography of the survey area is highly variable because it lies within both the Southern Appalachian Ridges and Valleys and the Blue Ridge Major Land Resource Areas. The survey area covers 255,100 acres, or about 399 square miles. It is bounded on the east by Cocke County, on the north by Jefferson County, on the west by Blount and Knox Counties, and on the south by the Great Smoky Mountains National Park. About 127,500 acres of Sevier County lies within the Great Smoky Mountains National Park. This acreage is not included in the soil survey. It is included as part of the soil survey area of the Great Smoky Mountains National Park.

In 1990, Sevierville, the county seat, had a population of about 7,200. It is the largest town in the county. Gatlinburg and Pigeon Forge, the next largest towns, have populations of 3,500 and 3,000, respectively. The population of Sevier County, according to the 1990 U.S. Census, is about 51,000.

This soil survey updates the survey of the private lands of Sevier County published in 1956 *(3)*. It provides additional information and has larger maps, which show the soils in greater detail.

Figure 1.—Location of Sevier County in Tennessee.

General Nature of the Survey Area

This section gives general information about the survey area. It describes the history and economic development; physiography, geology, and drainage; and climate.

History and Economic Development

This section was prepared by Beulah D. Lynn, Sevier County Historian.

The section of Sevier County lying north of the French Broad River was perhaps the site of the first settlement in 1783. The early settlers, mostly from Virginia and North Carolina, were of English, Scotch-Irish, and German descent. These settlers arrived before the land was ceded by the Cherokee Indians. Because Indian towns and villages were near the settlers, friction between the two groups was inevitable. General John Sevier inflicted a severe defeat on the Cherokee Indians at Body's Creek on December 16, 1780, shortly after the Battle of King's Mountain. The Indian lands were partially ceded by the Treaty of Dumplin Creek in 1785. After this treaty, settlement into the area south of the French Broad River spread rapidly.

Sevier County has the distinction of having three birthdays, one in 1785 under the State of Franklin, one in 1794 under the Territory South of the River Ohio, and one in 1796 under the State of Tennessee. Sevierville, which is the county seat of Sevier County and almost as old as the county itself, was established in 1795. Both the county and the town were named for General John Sevier.

Topography played a major role in the settlement of the county. The northern one-third of the county is an area of fertile river bottom land and gentle rolling ridges. In this area, the soil is productive, rainfall is abundant, temperatures are mild, and several creeks and two rivers traverse the land. For these reasons, the northern part of the county was considered excellent farmland and was naturally settled first. Beyond the rich river bottoms is the hilly middle section of the county. This area is drained by the West Fork, the main East Fork (also known as the Middle Prong), and the Little East Fork of the Little Pigeon River. Although this area has some good farmland, it was considered less suitable for farming. After the land in the middle hills was claimed, settlers were forced deeper into the Great Smoky Mountains. They first made homes along the creek bottoms and in the coves and then on the sides of the great mountains. Some of the mountain peaks are more than 6,000 feet in height. The mountains are wrapped in a deep, mysterious, blue-gray haze. The Cherokee Indians called this area the “land of the smoke.” In this area, the soil is rich along the creek beds and in the coves where there is much flat land. Temperatures generally are cooler, and rainfall is almost universally heavier.

The most important industry in the 19th century was gristmills, several of which flourished in the county. An iron works was built by Isaac Love in 1817 and was in operation until the Civil War. During the Civil War, both Union and Confederate troops occupied the county at different times. Economic disruption and provisioning of the armies brought on extreme privation. In post-war years, the county returned to a mainly agricultural economy.

At the turn of the 20th century, more than half of Sevier County was forested. Large oaks, hemlocks, chestnuts, maples, birches, white pine, ashes, poplars, and cherries were abundant. Soon after 1900, large northern-based commercial lumber companies began buying large quantities of land and carrying on massive timber-cutting operations until the establishment of the National Park in 1934.

Growth of industry and commerce was hampered by a lack of good roads and railroads, even into the 20th century. The Knoxville, Sevierville, and Eastern Railroad (KS&E) came to Sevierville in 1909 and extended to McCookville in 1920. Undergoing several changes of ownership, the railroad discontinued service in the 1950’s. The county did not acquire significant industry in the 20th century until Cherokee Textiles Mills moved to Sevierville in 1953. In recent years industry has been promoted by the building of modern industrial parks in the Sevierville area.

Tourism has developed into a major industry with the establishment of the Great Smoky Mountains National Park. Chapman Highway, which links the park to Knoxville, was completed in the 1950’s. Gatlinburg and Pigeon Forge have flourished to such an extent that they have become important tourist attractions in themselves and important employers in the county.

Physiography, Geology, and Drainage

This section was prepared by Arthur Grant Dunn, Sevier County Soil Scientist.

Sevier County lies within two Major Land Resource Areas (MLRAs). The southern two-thirds of the survey area is within the Blue Ridge MLRA, and the northern third is within the Southern Appalachian Ridges and Valleys MLRA. These two MLRAs differ greatly in their physiographic features and geological composition.

The Blue Ridge is comprised of mountains and foothills and has higher elevations. It is characterized by high relief due to past geologic uplifting, the dissection of streams, and mass wasting on the steep slopes. Within the survey area, elevations vary from 4,077 feet on Cove Mountain to approximately 1,000 feet at the lower stream levels. The higher elevations are along the main part of the Great Smoky Mountains range within the park. This area has several peaks exceeding 6,000 feet in elevation. Included among these peaks is Clingman’s Dome, the highest point in Tennessee, at an elevation of 6,642 feet.

Coves are a unique physiographic feature of the Blue Ridge. They are gently sloping to steep, concave areas that are surrounded by mountains. Colluvium from upland sources and alluvium from streams cover the narrower coves. Wears Valley is a prominent broad cove in the survey area. The valley’s bottom is composed of limestone and calcareous shale, which are normally found within the Ridges and Valleys MLRA. The surrounding mountains are rock types associated with the Blue Ridge.

The underlying geology of the Blue Ridge in the survey area consists mainly of rocks that have been highly folded and faulted and have undergone various degrees of metamorphism. These rocks are mainly Precambrian in age. Although a number of geologic

formations have been identified through investigations and mapping, they are commonly interbedded with other rock types. The major rock types include fine- to coarse-grained metasandstone, quartzite, metasiltstone, phyllite, slate, and metagraywacke. In the lower foothills along the northern edge of the Blue Ridge, the degree of metamorphism is less noticeable. The rock types in this area are similar to those in the Ridges and Valleys MLRA. They include conglomerate, sandstone, shale, dolomite, and limestone. They are mainly Cambrian in age.

The mountainous and hilly terrain of the Blue Ridge has been highly dissected by perennial and intermittent streams. The dominant drainage pattern in the Blue Ridge is dendritic. Dendritic drainage has a tree-like pattern that forms as tributaries branch and branch again upstream from a main stream. This pattern develops on landscapes composed of relatively uniform rock material. The larger streams have a meandering pattern that is controlled in part by variations in the bedrock geology. In the Blue Ridge, these streams include the Little Pigeon River and the West Prong of the Little Pigeon River, along with the major creeks of this province. Some of the creeks in this province are Bird, Dudley, Dunn, Webb, Walden, and Cove Creeks. The creeks drain into the Pigeon Rivers, which drain into the adjacent Ridges and Valleys MLRA.

The Southern Ridges and Valleys is an area of alternating parallel ridges and valleys in the northwestern part of Sevier County. The alternating ridges and valleys parallel the strikes of the underlying folded and faulted bedrock. This area extends in a northeast-southwest direction that is parallel and adjacent to the Blue Ridge. The elevation of the ridges is generally lower and more uniform in the Ridges and Valleys than in the Blue Ridge. Within the Ridges and Valleys, there are three distinct major physiographic subdivisions—the limestone valley area, the limestone and shale ridge and valley area, and the shale hill area. The limestone valley area consists of low-lying ridges and valleys underlain by dolomitic limestone of the Knox Group. The relief is generally rolling to hilly. This area is characterized by karst topography—hummocky landscapes with sinkholes. This topography develops in limestone regions that have a humid climate. The limestone and shale ridge and valley area consists of a series of parallel low ridges and broad valleys. It is underlain by folded, interbedded shale, sandstone, and limestone of the Conasauga Group and the Rome Formation. The different rocks outcrop in layers trending in a northeast-southwest direction. The ridges, major streams, and many of the roads follow the same direction as the rock outcrops. The Tellico and the Ottosee Shale Formations underlie the shale hill area. This area has been highly dissected by streams that have cut deep, narrow V-shaped valleys and by places where the uplands have eroded into low rounded knobs.

The geologic characteristics of the Ridges and Valleys have a major influence on drainage patterns. In the limestone valley area, the karst topography produces a deranged drainage pattern, where streams enter sinkholes and flow through subterranean caverns. In the limestone and shale ridge and valley area, the variation in geologic resistance forms a trellis drainage pattern, where the main streams occupy the valleys and the minor tributaries are forced into right angles with the main stream channels. The shale hill area has a dendritic drainage pattern since the geology is relatively uniform.

Three major rivers drain the Ridges and Valleys—the West Fork of the Little Pigeon River, the Little Pigeon River, and the French Broad River. The two Pigeon Rivers enter the Ridges and Valleys from the Blue Ridge. The rivers run northwest and converge at Sevierville, then drain into the French Broad River. The French Broad River enters the county in the northeastern part at the Jefferson County line.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Gatlinburg, Tennessee, during the period of 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 38.3 degrees F. The average daily minimum temperature is 26.4 degrees. The lowest temperature on record is -18, recorded on January 21, 1985. In summer, the average temperature is 71.6 degrees and the average daily maximum temperature is 83.5 degrees. The highest temperature ever recorded is 106, which occurred on June 30, 1936.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is somewhat variable across the county. At Gatlinburg, about 57.15 inches falls in a typical year. In general, precipitation is

lowest over the northernmost parts of the county, where between 40 and 45 inches of precipitation falls.

To the south precipitation increases, and the foothills of the Great Smokies receive between 55 and 65 inches of precipitation annually. Of these amounts, around 50 percent usually falls in May through October, which is the growing season for most crops in most of the county. The heaviest 1-day amount of precipitation at Gatlinburg during the period of record was 5.34 inches, recorded on July 26, 1943. Thunderstorms occur on about 47 days each year, and most occur between May and August.

The average seasonal snowfall also is quite variable across the county and is dependent on elevation. The mean annual snowfall is 9.3 inches at Gatlinburg. The foothills of the Smokies receive between 10 and 20 inches annually. At Gatlinburg, the greatest snow depth at any one time during the period of record was 16 inches, recorded on March 3, 1942. On average, at Gatlinburg about 4 days per year have at least 1 inch of snow on the ground. In the foothills, 5 to 20 days per year is normal. The heaviest 1-day snowfall on record was 16.0 inches, recorded on March 13, 1993.

The average relative humidity in midafternoon is about 59 percent. Humidity is higher at night, and the average at dawn is about 86 percent. The sun shines 64 percent of the time possible in summer and 42 percent in winter. The prevailing wind is from the northeast. Average windspeed is highest, between 8 and 9 miles per hour, from January to April.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information,

production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

General Soil Map Units

The general soil map shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Soil Descriptions

1. Decatur-Dewey-Fullerton

Gently sloping to steep, well drained, very deep soils that have clayey subsoils; formed in residuum from limestone, in old alluvium overlying residuum from limestone, and in residuum weathered from cherty dolomite

Setting

Location in the survey area: Mostly in the northwestern part; north of Boyds Creek and the French Broad River and in a broad valley north of Shields and English Mountains
Landscape: Ridges and Valleys
Landform: High stream terraces and upland ridges
Slope range: 2 to 60 percent
Extent of map unit in the survey area: About 6 percent

Composition

Decatur soils: 50 to 55 percent
Dewey soils: 20 to 25 percent
Fullerton soils: 10 to 15 percent
Minor soils (including Etowah, Waynesboro, Talbott, and Steadman): 5 to 15 percent

Soil Characteristics

Decatur

Surface layer: Dark reddish brown silt loam
Subsoil: Dark reddish brown clay
Slope range: 2 to 25 percent
Drainage class: Well drained
Depth to bedrock: More than 60 inches
Landform position: Summits and side slopes

Dewey

Surface layer: Dark reddish brown silt loam
Subsurface layer: Reddish brown clay loam
Subsoil: Upper part—red clay; lower part—red and dark red clay
Slope range: 2 to 25 percent
Drainage class: Well drained
Depth to bedrock: More than 60 inches
Landform position: Summits and side slopes

Fullerton

Surface layer: Brown gravelly silt loam
Subsurface layer: Yellowish brown gravelly silt loam
Subsoil: Upper part—yellowish red gravelly clay; lower part—red gravelly clay
Slope range: 5 to 60 percent
Drainage class: Well drained
Depth to bedrock: More than 60 inches
Landform position: Summits and side slopes

Use and Management

Major Uses: Pasture, hayland, and cultivated crops

Cropland

Management concerns: Hazard of erosion, slope, and soil fertility

Pasture and hayland

Management concerns: Slope and soil fertility

Woodland

Management concerns: Hazard of erosion, equipment use, and plant competition

Urban development

Management concerns: Slope, restricted permeability in the subsoil, shrink-swell potential, and low strength

2. Nonaburg-Steadman-Whitesburg

Nearly level to steep, well drained and moderately well drained, shallow to very deep soils that have clayey or loamy subsoils; formed in residuum weathered from calcareous shale and in alluvium washed from materials weathered from mixed sedimentary and metamorphic rocks and calcareous shale

Setting

Location in the survey area: Mostly in the north-central part; south of Boyds Creek and the French Broad River; dissecting the survey area in a southwest-northeast direction
Landscape: Ridges and Valleys
Landform: Upland ridges and adjacent flood plains and drainageways
Slope range: 0 to 60 percent
Extent of map unit in the survey area: About 30 percent

Composition

Nonaburg soils: 50 to 55 percent
Steadman soils: 20 to 25 percent
Whitesburg soils: 15 to 20 percent
Minor soils (including Townley, Leadvale, Muse, and Dunning): 5 to 15 percent

Soil Characteristics

Nonaburg

Surface layer: Brown channery silt loam
Subsurface layer: Strong brown channery silt loam
Subsoil: Strong brown channery silty clay
Bedrock: Upper part—soft fractured calcareous shale; lower part—hard calcareous shale
Slope range: 5 to 60 percent
Drainage class: Well drained
Depth to bedrock: 8 to 20 inches
Landform position: Ridge summits and side slopes

Steadman

Surface layer: Dark yellowish brown silt loam
Subsoil: Upper part—yellowish brown silt loam; lower part—yellowish brown silt loam that has brownish gray masses of iron depletion and yellowish brown masses of iron concentration
Underlying material: Yellowish brown silt loam that has light brownish gray masses of iron depletion and yellowish brown masses of iron concentration
Slope range: 0 to 3 percent
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 24 to 36 inches
Flooding: Occasional
Depth to bedrock: More than 60 inches
Landform position: Linear or slightly concave slopes

Whitesburg

Surface layer: Brown silt loam
Subsoil: Upper part—yellowish brown silt loam; lower part—yellowish brown silty clay loam that has pale brown and strong brown masses of iron concentration
Underlying material: Yellowish brown silty clay loam that has light brownish gray masses of iron depletion and yellowish brown masses of iron concentration
Bedrock: Soft calcareous shale
Slope range: 1 to 5 percent
Drainage class: Moderately well drained
Seasonal high water table: At a depth of 24 to 48 inches
Flooding: Occasional
Depth to bedrock: 40 to 60 inches
Landform position: Linear slopes of drainageways

Use and Management

Major Uses: Pasture, hayland, and woodland

Cropland

Management concerns: Nonaburg—hazard of erosion, shallow root zone, depth to bedrock, low available water capacity, and soil fertility; Steadman and Whitesburg—flooding and wetness

Pasture and hayland

Management concerns: Nonaburg—slope, equipment use, and soil fertility; Steadman and Whitesburg—flooding and equipment use

Woodland

Management concerns: Nonaburg—equipment use, seedling mortality, and windthrow hazard; Steadman and Whitesburg—plant competition

Urban development

Management concerns: Nonaburg—slope, depth to bedrock, and shrink-swell potential; Steadman and Whitesburg—flooding and wetness

3. Townley-Talbott-Muskingum

Gently sloping to steep, well drained, moderately deep soils that have loamy or clayey subsoils; formed in residuum weathered from shale, siltstone, limestone, or sandstone

Setting

Location in the survey area: Mostly in the northwestern part, including Whittle Mountain and Bays Mountain along the Knox County line, in the Kodak area, and northwest of Poor Valley
Landscape: Ridges and Valleys
Landform: Ridges
Slope range: 2 to 60 percent
Extent of map unit in the survey area: About 5 percent

Composition

Townley soils: 50 to 55 percent
Talbott soils: 15 to 20 percent
Muskingum soils: 10 to 15 percent
Minor inclusions (including Chiswell, Dewey, and Steadman soils and Rock outcrop): 10 to 20 percent

Soil Characteristics

Townley

Surface layer: Brown silt loam
Subsoil: Upper part—strong brown and yellowish red clay
Bedrock: Soft, fractured shale
Slope range: 2 to 60 percent
Drainage class: Well drained
Depth to bedrock: 20 to 40 inches
Landform position: Summits and side slopes

Talbott

Surface layer: Brown silty clay loam
Subsoil: Yellowish red clay
Bedrock: Hard limestone
Slope range: 10 to 60 percent
Drainage class: Well drained
Depth to bedrock: 20 to 40 inches
Landform position: Summits and side slopes

Muskingum

Surface layer: Brown channery loam
Subsoil: Upper part—brown channery loam; lower part—brown loam
Underlying material: Brown channery loam
Bedrock: Soft, fractured fine-grained sandstone
Slope range: 25 to 60 percent
Drainage class: Well drained
Depth to bedrock: 20 to 40 inches
Landform position: Summits and side slopes

Use and Management

Major Uses: Pasture, hayland, and woodland

Cropland

Management concerns: Hazard of erosion, slope, and soil fertility

Pasture and hayland

Management concerns: Slope, equipment use, low available water capacity, and soil fertility

Woodland

Management concerns: Hazard of erosion, equipment use, seedling mortality, and windthrow hazard

Urban development

Management concerns: Townley—slope, depth to bedrock, restricted permeability, and shrink-swell potential; Talbott and Muskingum—slope and depth to bedrock

4. Sequatchie-Staser-Combs

Nearly level, well drained, very deep soils that have loamy subsoils; formed in alluvium from materials weathered from mixed sedimentary and metamorphic rocks; along low stream terraces and flood plains of major streams

Setting

Location in the survey area: Along the West and Middle Forks of the Little Pigeon River and along the Little Pigeon, Pigeon, and French Broad Rivers
Landscape: Ridges and Valleys (fig. 2)
Landform: Low stream terraces and flood plains of major streams
Slope range: 0 to 3 percent
Extent of map unit in the survey area: About 3 percent

Composition

Sequatchie soils: 50 to 55 percent
Staser soils: 15 to 20 percent
Combs soils: 10 to 15 percent
Minor soils (including Dunning, Steadman, Holston, Leadvale, and Waynesboro): 5 to 15 percent

Soil Characteristics

Sequatchie

Surface layer: Dark brown loam

Figure 2.—Typical landscape of the Sequatchie-Staser-Combs general soil map unit. Nonaburg soils are in the background.

Subsurface layer: Brown loam
Subsoil: Upper part—strong brown clay loam; lower part—strong brown loam
Underlying material: Strong brown sandy loam
Slope range: 0 to 3 percent
Drainage class: Well drained
Seasonal high water table: At a depth of more than 72 inches
Depth to bedrock: More than 60 inches
Landform position: Linear slopes of low stream terraces

Staser

Surface layer: Dark brown loam
Subsurface layer: Very dark grayish brown and dark brown loam
Subsoil: Upper part—brown loam; lower part—dark yellowish brown fine sandy loam
Underlying material: Dark yellowish brown fine sandy loam
Slope range: 0 to 2 percent
Drainage class: Well drained
Seasonal high water table: At a depth of 36 to 48 inches
Depth to bedrock: More than 60 inches
Landform position: Linear slopes of broad flood plains

Combs

Surface layer: Dark brown loam
Subsurface layer: Very dark grayish brown sandy loam
Subsoil: Dark yellowish brown sandy loam
Underlying material: Dark yellowish brown sandy loam
Slope range: 0 to 2 percent
Drainage class: Well drained
Seasonal high water table: At a depth of more than 60 inches
Depth to bedrock: More than 72 inches
Landform position: Linear to slightly convex slopes of broad flood plains

Use and Management

Major Uses: Pasture, hayland, and row crops

Cropland

Management concerns: Flooding and soil fertility

Pasture and hayland

Management concerns: Flooding and soil fertility

Woodland

Management concerns: Plant competition

Urban development

Management concerns: Flooding

5. Braddock-Lostcove-Lonon

Gently sloping to moderately steep, well drained, very deep soils that have clayey or loamy subsoils; formed in colluvium and alluvium from materials weathered from metasedimentary rocks

Setting

Location in the survey area: Mostly in the southern half; south and east of Webb Mountain in the Rocky Flats area, south of Bluff Mountain, north of English Mountain, and in the Wear Cove area
Landscape: Blue Ridge
Landform: High stream terraces and colluvial or alluvial fans at the base of mountains and in coves
Slope range: 2 to 25 percent
Extent of map unit in the survey area: About 5 percent

Composition

Braddock soils: 50 to 55 percent
Lostcove soils: 20 to 25 percent
Lonon soils: 10 to 15 percent
Minor soils (including Northcove, Ditney, Junaluska, Soco, Cataska, Unicoi, Pope, and Steadman): 5 to 20 percent

Soil Characteristics

Braddock

Surface layer: Dark yellowish brown loam
Subsurface layer: Strong brown gravelly clay loam
Subsoil: Upper part—red gravelly clay; lower part—red clay
Slope range: 2 to 25 percent
Drainage class: Well drained
Depth to bedrock: More than 60 inches
Landform position: Summits, side slopes, and footslopes of stream terraces and colluvial fans

Lostcove

Surface layer: Brown very cobbly loam
Subsoil: Upper part—brown and strong brown very cobbly clay loam; lower part—strong brown and yellowish brown very cobbly loam
Slope range: 5 to 25 percent
Drainage class: Well drained
Depth to bedrock: More than 60 inches
Landform position: Footslopes and toeslopes of colluvial fans

Lonon

Surface layer: Brown gravelly loam
Subsurface layer: Yellowish brown gravelly loam
Subsoil: Upper part—yellowish red clay loam; middle part—yellowish red gravelly clay loam; lower part—yellowish red gravelly loam
Slope range: 2 to 25 percent
Drainage class: Well drained
Depth to bedrock: More than 60 inches
Landform position: Footslopes and toeslopes of colluvial or alluvial fans

Use and Management

Major Uses: Pasture, hayland, woodland, and some cultivated crops

Cropland

Management concerns: Hazard of erosion, slope, and soil fertility

Pasture and hayland

Management concerns: Slope, equipment use, and soil fertility

Woodland

Management concerns: Hazard of erosion, equipment use, seedling mortality, and plant competition

Urban development

Management concerns: Braddock and Lonon—slope and restricted permeability; Lostcove—slope, restricted permeability, and boulders and stones on the surface

6. Cataska-Unicoi-Ditney

Moderately steep to very steep, well drained and excessively drained, shallow and moderately deep soils that have loamy subsoils; formed in residuum weathered from metasedimentary rocks

Setting

Location in the survey area: Mostly in the southern

half; aligned in an area along Hatcher, Pine, Shields, and Dixon Mountains
Landscape: Blue Ridge
Landform: Ridges
Slope range: 12 to 80 percent
Extent of map unit in the survey area: About 12 percent

Composition

Cataska soils: 50 to 55 percent
Unicoi soils: 20 to 25 percent
Ditney soils: 10 to 15 percent
Minor inclusions (including Junaluska, Soco, Braddock, Lonon, Northcove, Pope, and Steadman soils and Rock outcrop): 5 to 20 percent

Soil Characteristics

Cataska

Surface layer: Dark yellowish brown channery silt loam
Subsoil: Upper part—yellowish brown very channery silt loam; lower part—dark yellowish brown extremely channery silt loam
Bedrock: Soft, fractured metasiltstone
Slope range: 12 to 80 percent
Drainage class: Excessively drained
Depth to bedrock: 10 to 20 inches
Landform position: Summits and side slopes

Unicoi

Surface layer: Very dark grayish brown gravelly sandy loam
Subsoil: Yellowish brown very gravelly sandy loam
Bedrock: Hard, fractured metasandstone
Slope range: 30 to 80 percent
Drainage class: Excessively drained
Depth to bedrock: 7 to 20 inches
Landform position: Summits and side slopes

Ditney

Surface layer: Brown sandy loam
Subsurface layer: Yellowish brown sandy loam
Subsoil: Yellowish brown and strong brown sandy loam
Underlying material: Strong brown sandy loam
Bedrock: Hard metasandstone
Slope range: 12 to 80 percent
Drainage class: Well drained
Depth to bedrock: 20 to 40 inches
Landform position: Summits and side slopes

Use and Management

Major Uses: Woodland

Cropland

Management concerns: Hazard of erosion, slope, and depth to bedrock

Pasture and hayland

Management concerns: Slope and equipment use

Woodland

Management concerns: Hazard of erosion, equipment use, seedling mortality, and windthrow hazard

Urban development

Management concerns: Slope and depth to bedrock

7. Unicoi-Northcove-Ditney

Moderately steep to very steep, well drained and excessively drained, shallow to very deep soils that have loamy subsoils; formed in residuum and colluvium from metasedimentary rocks

Setting

Location in the survey area: In the southern half; on Chilhowee, Webb, Cove, and English Mountains
Landscape: Blue Ridge
Landform: Upland ridges and colluvial fans and coves
Slope range: 12 to 80 percent
Extent of map unit in the survey area: About 8 percent

Composition

Unicoi soils: 50 to 55 percent
Northcove soils: 20 to 25 percent
Ditney soils: 10 to 15 percent
Minor inclusions (including Soco, Cataska, Junaluska, and Lostcove soils and Rock outcrop): 5 to 20 percent

Soil Characteristics

Unicoi

Surface layer: Very dark grayish brown gravelly sandy loam
Subsoil: Yellowish brown very gravelly sandy loam
Bedrock: Hard, fractured metasandstone
Slope range: 30 to 80 percent
Drainage class: Excessively drained
Depth to bedrock: 7 to 20 inches
Landform position: Summits and side slopes of upland ridges

Northcove

Surface layer: Dark brown stony sandy loam
Subsoil: Upper part—dark yellowish brown very

cobbly sandy loam; middle part—yellowish brown very cobbly loam; lower part—yellowish brown extremely cobbly loam
Slope range: 35 to 50 percent
Drainage class: Well drained
Depth to bedrock: More than 60 inches
Landform position: Footslopes and toeslopes of colluvial fans and coves

Ditney

Surface layer: Brown sandy loam
Subsurface layer: Yellowish brown sandy loam
Subsoil: Yellowish brown and strong brown sandy loam
Underlying material: Strong brown sandy loam
Bedrock: Hard metasandstone
Slope range: 12 to 80 percent
Drainage class: Well drained
Depth to bedrock: 20 to 40 inches
Landform position: Summits and side slopes of upland ridges

Use and Management

Major Uses: Woodland

Cropland

Management concerns: Hazard of erosion, slope, and depth to bedrock

Pasture and hayland

Management concerns: Slope and equipment use

Woodland

Management concerns: Hazard of erosion, equipment use, seedling mortality, and windthrow hazard

Urban development

Management concerns: Unicoi and Ditney—slope and depth to bedrock; Northcove—slope, depth to bedrock, and boulders and stones on the surface

8. Cataska-Junaluska-Sylco

Moderately steep to very steep, well drained and excessively drained, shallow and moderately deep soils that have loamy subsoils; formed in residuum from metasedimentary rocks

Setting

Location in the survey area: On most of the mountains in the southern half
Landscape: Blue Ridge
Landform: Ridges
Slope range: 12 to 80 percent
Extent of map unit in the survey area: About 26 percent

Composition

Cataska soils: 50 to 55 percent
Junaluska soils: 20 to 25 percent
Sylco soils: 10 to 15 percent
Minor soils (including Ditney, Soco, Unicoi, and Steadman): 5 to 20 percent

Soil Characteristics

Cataska

Surface layer: Dark yellowish brown channery silt loam
Subsoil: Upper part—yellowish brown very channery silt loam; lower part—dark yellowish brown extremely channery silt loam
Bedrock: Soft, fractured metasiltstone
Slope range: 12 to 80 percent
Drainage class: Excessively drained
Depth to bedrock: 10 to 20 inches
Landform position: Summits and side slopes

Junaluska

Surface layer: Yellowish brown silt loam
Subsoil: Upper part—strong brown silty clay loam; lower part—strong brown and yellowish red channery silty clay loam
Bedrock: Soft, fractured metasiltstone
Slope range: 12 to 25 percent
Drainage class: Well drained
Depth to bedrock: 20 to 40 inches
Landform position: Summits and side slopes

Sylco

Surface layer: Yellowish brown channery silt loam
Subsoil: Strong brown very channery silt loam
Soft bedrock: Soft, fractured metasiltstone
Hard bedrock: Hard metasiltstone
Slope range: 25 to 80 percent
Drainage class: Somewhat excessively drained
Depth to bedrock: 20 to 40 inches
Landform position: Summits and side slopes

Use and Management

Major Uses: Woodland

Cropland

Management concerns: Hazard of erosion, slope, and depth to bedrock

Pasture and hayland

Management concerns: Slope and equipment use

Woodland

Management concerns: Hazard of erosion, equipment use, seedling mortality, and windthrow hazard

Urban development

Management concerns: Slope and depth to bedrock

9. Waynesboro-Holston-Dunning

Nearly level to moderately steep, well drained and poorly drained, very deep soils that have loamy or clayey subsoils; formed in old alluvium on stream terraces and in recent alluvium on flood plains

Setting

Location in the survey area: In major river bends on the south side of the French Broad River and along the Little Pigeon River and its tributaries
Landscape: Ridges and Valleys
Landform: High stream terraces and narrow drainageways
Slope range: 2 to 25 percent
Extent of map unit in the survey area: About 5 percent

Composition

Waynesboro soils: 50 to 55 percent
Holston soils: 20 to 25 percent
Dunning soils: 10 to 15 percent
Minor soils (including Dewey, Fullerton, Etowah, Leadvale, Combs, Sequatchie, and Staser): 5 to 20 percent

Soil Characteristics

Waynesboro

Surface layer: Brown loam
Subsoil: Upper part—red clay; middle part—dark red clay; lower part—dark red gravelly clay
Slope range: 2 to 25 percent
Drainage class: Well drained
Depth to bedrock: More than 60 inches
Landform position: Summits and side slopes of high stream terraces

Holston

Surface layer: Brown loam
Subsurface layer: Yellowish brown loam
Subsoil: Upper part—yellowish brown and strong brown clay loam; lower part—strong brown and yellowish red clay
Slope range: 2 to 12 percent
Drainage class: Well drained
Depth to bedrock: More than 60 inches
Landform position: Summits and side slopes of high stream terraces

Dunning

Surface layer: Very dark gray silty clay loam
Subsoil: Dark gray clay that has strong brown and yellowish brown masses of iron concentration
Underlying material: Dark gray gravelly clay that has yellowish brown masses of iron concentration
Slope range: 0 to 2 percent
Drainage class: Poorly drained
Seasonal high water table: From the surface to a depth of 6 inches
Depth to bedrock: More than 60 inches
Landform position: Linear slopes and depressions of flood plains

Use and Management

Major Uses: Hayland, pasture, and row crops

Cropland

Management concerns: Waynesboro and Holston—hazard of erosion and slope; Dunning—flooding and wetness

Pasture and hayland

Management concerns: Waynesboro and Holston—slope and equipment use; Dunning—flooding and wetness

Woodland

Management concerns: Waynesboro and Holston—hazard of erosion and equipment use; Dunning—equipment use, seedling mortality, windthrow hazard, and plant competition

Urban development

Management concerns: Waynesboro and Holston—slope and restricted permeability; Dunning—flooding and wetness

Detailed Soil Map Units

The map units delineated on the detailed maps represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the heading “Use and Management of the Soils.”

A map unit delineation on a map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils or miscellaneous areas. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some “included” areas that belong to other taxonomic classes.

Most included soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, inclusions. They may or may not be mentioned in the map unit description. Other included soils and miscellaneous areas, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, inclusions. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The included areas of contrasting soils or miscellaneous areas are mentioned in the map unit descriptions. A few included areas may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of included areas in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Etowah loam, 2 to 5 percent slopes, is a phase of the Etowah series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Junaluska-Cataska complex, 12 to 25 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such

areas have little or no soil material and support little or no vegetation. Urban land is an example.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Soil Descriptions

BrB2—Braddock loam, 2 to 5 percent slopes, eroded

Setting

Landscape: Blue Ridge
Landform: High stream terraces
Landform position: Summits and footslopes
Shape of areas: Irregular or elongated
Size of areas: 5 to 80 acres

Composition

Braddock soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown loam

Subsurface layer:
5 to 11 inches—strong brown gravelly clay loam

Subsoil:
11 to 34 inches—red gravelly clay
34 to 60 inches—red clay

Minor Soils

Similar soils:
- Intermingled areas of Lonon soils
- Intermingled areas of Braddock soils that have widely scattered stones on the surface

Dissimilar soils:
- Intermingled areas of Lostcove soils

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
- Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability: Well suited
Management measures and considerations:
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
- Proper site preparation helps to reduce plant competition from undesirable species.
- See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Moderately suited
Management measures and considerations:
- Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
- Reinforcing foundations, footings, and basements helps to prevent damage caused by shrinking and swelling.
- Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.

Interpretive Group

Land capability classification: 2e

BrC2—Braddock loam, 5 to 12 percent slopes, eroded

Setting

Landscape: Blue Ridge
Landform: High stream terraces and colluvial fans

Landform position: Summits and side slopes
Shape of areas: Irregular or elongated
Size of areas: 5 to 80 acres

Composition

Braddock soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown loam

Subsurface layer:
5 to 11 inches—strong brown gravelly clay loam

Subsoil:
11 to 34 inches—red gravelly clay
34 to 60 inches—red clay

Minor Soils

Similar soils:
- Intermingled areas of Lonon soils
- Intermingled areas of Braddock soils that have widely scattered stones on the surface

Dissimilar soils:
- Intermingled areas of Lostcove soils

Use and Management

Cropland

Suitability: Moderately suited
Management measures and considerations:
- The potential for erosion is greater when conventional tillage is used.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
- Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
- In the steeper areas, the slope may limit the use of equipment for harvesting hay crops.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
- Proper site preparation helps to reduce plant competition from undesirable species.
- See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Moderately suited
Management measures and considerations:
- Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
- Reinforcing foundations, footings, and basements helps to prevent damage caused by shrinking and swelling.
- Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.
- Grading or shaping land prior to construction helps to minimize the damage from surface water and prevent erosion.

Interpretive Group

Land capability classification: 3e

BrD2—Braddock loam, 12 to 25 percent slopes, eroded

Setting

Landscape: Blue Ridge
Landform: High stream terraces and colluvial fans
Landform position: Side slopes and footslopes
Shape of areas: Irregular or elongated
Size of areas: 5 to 80 acres

Composition

Braddock soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown loam

Subsurface layer:
5 to 11 inches—strong brown gravelly clay loam

Subsoil:
11 to 34 inches—red gravelly clay
34 to 60 inches—red clay

Minor Soils

Similar soils:
- Intermingled areas of Lonon soils
- Intermingled areas of Braddock soils that have widely scattered stones on the surface

Dissimilar soils:
- Intermingled areas of Lostcove soils

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
- Susceptibility to erosion and the slope are the main limitations affecting cultivated crops.
- The potential for erosion is greater when conventional tillage is used.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
- Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Moderately suited
Suitability for hayland: Poorly suited
Management measures and considerations:
- The slope limits the use of equipment for harvesting hay crops.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
- The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
- The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
- Seedling mortality rates may be affected by increased rates of surface water runoff and a lower moisture supply. Reinforcement plantings can be made until a desired stand is attained.
- Proper site preparation helps to reduce plant competition from undesirable species.
- See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
- The slope is the main limitation affecting urban uses.
- Designing structures and septic tank absorption fields so that they conform to the natural slope or building in the less sloping areas helps to improve soil performance.
- Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.

Interpretive Group

Land capability classification: 4e

CaD—Cataska channery silt loam, 12 to 25 percent slopes

Setting

Landscape: Blue Ridge
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 5 to 150 acres

Composition

Cataska soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Excessively drained
Permeability: Moderately rapid or rapid
Available water capacity: Very low
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: 10 to 20 inches

Typical Profile

Surface layer:
0 to 2 inches—dark yellowish brown channery silt loam

Subsoil:
2 to 8 inches—yellowish brown very channery silt loam
8 to 12 inches—dark yellowish brown extremely channery silt loam

Bedrock:
12 to 40 inches—soft, fractured slate

Minor Soils

Similar soils:
• Intermingled areas of soils that have fewer rock fragments throughout than the Cataska soil

Dissimilar soils:
• Intermingled areas of Junaluska and Sylco soils
• Intermingled areas of soils that have soft bedrock at a depth of more than 40 inches

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• The main limitations affecting cultivated crops are the hazard of erosion, the slope, the shallow rooting zone, the depth to bedrock, and the very low available water capacity.

Pasture and hayland

Suitability: Poorly suited
Management measures and considerations:
• This soil is difficult to manage for pasture and hayland due to the shallow rooting depth and very low available water capacity.
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
• The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
• Seedling mortality rates may be high due to the limited rooting depth and very low available water capacity. Available moisture may be further reduced on the warmer aspects. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slope and depth to bedrock are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.
• Designing structures and septic tank absorption fields so that they conform to the natural slope or building in the less sloping areas helps to improve soil performance.
• The slope and depth to bedrock are severe limitations affecting septic tank absorption fields. These limitations are difficult and expensive to overcome.
• Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.

Interpretive Group

Land capability classification: 7s

CaE—Cataska channery silt loam, 25 to 80 percent slopes

Setting

Landscape: Blue Ridge

Landform: Ridges
Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 10 to several hundred acres

Composition

Cataska soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Excessively drained
Permeability: Moderately rapid or rapid
Available water capacity: Very low
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: 10 to 20 inches

Typical Profile

Surface layer:
0 to 2 inches—dark yellowish brown channery silt loam

Subsoil:
2 to 8 inches—yellowish brown very channery silt loam
8 to 12 inches—dark yellowish brown extremely channery silt loam

Bedrock:
12 to 40 inches—soft, fractured slate

Minor Soils

Similar soils:
• Intermingled areas of soils that have fewer rock fragments throughout than the Cataska soil

Dissimilar soils:
• Intermingled areas of Junaluska and Sylco soils
• Intermingled areas of soils that have soft bedrock at a depth of more than 40 inches

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• The main limitations affecting cultivated crops are the hazard of erosion, the slope, the shallow rooting zone, the depth to bedrock, and the very low available water capacity.

Pasture and hayland

Suitability: Poorly suited
Management measures and considerations:
• This soil is difficult to manage for pasture and hayland because of the slope, shallow rooting depth, and very low available water capacity.
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Careful planning is needed in forestry operations to minimize the hazard of erosion and maintain water quality.
• The hazard of erosion can be reduced by locating roads and trails on the contour, protecting permanent access roads through the use of gravel, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope may limit the practical use of conventional equipment.
• Logs can be cabled or winched to adjacent areas that have smoother slopes, and planting can be done by hand.
• Seedling mortality rates may be high due to the limited rooting depth and very low available water capacity. Available moisture may be further reduced on the warmer aspects. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slope and depth to bedrock are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: 7s

CcE—Cataska-Sylco complex, 25 to 80 percent slopes

Setting

Landscape: Blue Ridge
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 10 to several hundred acres

Composition

Cataska soil and similar soils: 40 to 50 percent
Sylco soil and similar soils: 35 to 45 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Cataska—excessively drained; Sylco—somewhat excessively drained
Permeability: Cataska—moderately rapid or rapid; Sylco—moderately rapid
Available water capacity: Cataska—very low; Sylco—low
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: Cataska—10 to 20 inches; Sylco—20 to 40 inches

Typical Profile

Cataska

Surface layer:
0 to 2 inches—dark yellowish brown channery silt loam

Subsoil:
2 to 8 inches—yellowish brown very channery silt loam
8 to 12 inches—dark yellowish brown extremely channery silt loam

Bedrock:
12 to 40 inches—soft, fractured slate

Sylco

Surface layer:
0 to 2 inches—yellowish brown channery silt loam

Subsoil:
2 to 25 inches—strong brown very channery silt loam

Bedrock:
25 to 33 inches—soft, fractured metasiltstone
33 inches—hard metasiltstone

Minor Soils

Similar soils:
• Intermingled areas of soils that have fewer rock fragments throughout than the Cataska and Sylco soils

Dissimilar soils:
• Intermingled areas of Junaluska soils
• Intermingled areas of soils that have soft bedrock at a depth of more than 40 inches

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• The main limitations affecting cultivated crops are the hazard of erosion, the slope, the shallow rooting zone, the depth to bedrock, and the very low or low available water capacity.

Pasture and hayland

Suitability: Poorly suited
Management measures and considerations:
• These soils are difficult to manage for pasture and hayland because of the slope, shallow rooting depth, and very low or low available water capacity.
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Careful planning is needed in forestry operations to minimize the hazard of erosion and maintain water quality.
• The hazard of erosion can be reduced by locating roads and trails on the contour, protecting permanent access roads through the use of gravel, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope may limit the practical use of conventional equipment.
• Logs can be cabled or winched to adjacent areas that have smoother slopes, and planting can be done by hand.

• Seedling mortality rates may be high due to the limited rooting depth and very low or low available water capacity. Available moisture may be further reduced on the warmer aspects. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slope and depth to bedrock are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: 7s

Co—Combs loam, rarely flooded

Setting

Landscape: Ridges and Valleys
Landform: Broad flood plains
Landform position: Linear to slightly convex slopes
Shape of areas: Elongated
Size of areas: 5 to 100 acres
Slope range: 0 to 2 percent

Composition

Combs soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: Rare
Reaction: Moderately acid to neutral
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 11 inches—dark brown loam

Subsurface layer:
11 to 23 inches—very dark grayish brown sandy loam

Subsoil:
23 to 48 inches—dark yellowish brown sandy loam

Underlying material:
48 to 62 inches—dark yellowish brown sandy loam

Minor Soils

Similar soils:
• Sequatchie soils on adjacent stream terraces
• Scattered areas of Etowah and Holston soils on adjacent high terraces

Dissimilar soils:
• Moderately well drained and poorly drained soils in the slightly concave landform positions

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• There is a potential for crop damage from flooding.

Pasture and hayland

Suitability: Well suited
Management measures and considerations:
• There is a potential for hay crop damage from flooding.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
• Flooding is a severe limitation affecting urban uses. This limitation is difficult and expensive to overcome. A site that is not subject to flooding should be selected.

Interpretive Group

Land capability classification: 2w

DcB2—Decatur silt loam, 2 to 5 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: High stream terraces and upland ridges
Landform position: Summits
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

Decatur soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid to moderately acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 8 inches—dark reddish brown silt loam

Subsoil:
8 to 60 inches—dark reddish brown clay

Minor Soils

Similar soils:
• Intermingled areas of Dewey, Etowah, and Fullerton soils

Dissimilar soils:
• Narrow areas of Steadman and Sequatchie soils along drainageways and in depressions

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability: Well suited
Management measures and considerations:
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Moderately suited
Management measures and considerations:
• Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
• Reinforcing foundations, footings, and basements helps to prevent damage caused by shrinking and swelling.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.

Interpretive Group

Land capability classification: 2e

DcC2—Decatur silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: High stream terraces and upland ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

Decatur soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high

Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid to moderately acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 8 inches—dark reddish brown silt loam

Subsoil:
8 to 60 inches—dark reddish brown clay

Minor Soils

Similar soils:
• Intermingled areas of Dewey, Etowah, and Fullerton soils

Dissimilar soils:
• Narrow areas of Steadman and Sequatchie soils along drainageways and in depressions

Use and Management

Cropland

Suitability: Moderately suited
Management measures and considerations:
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
• In the steeper areas, the slope may limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Moderately suited
Management measures and considerations:
• Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
• Reinforcing foundations, footings, and basements helps to prevent damage caused by shrinking and swelling.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.
• Grading or shaping land prior to construction helps to minimize the damage from surface water and prevent erosion.

Interpretive Group

Land capability classification: 3e

DcD2—Decatur silt loam, 12 to 25 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: High stream terraces and upland ridges
Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

Decatur soil and similar soils: 85 to 90 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid to moderately acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 8 inches—dark reddish brown silt loam

Subsoil:
8 to 60 inches—dark reddish brown clay

Minor Soils

Similar soils:
• Intermingled areas of Dewey, Etowah, and Fullerton soils

Dissimilar soils:
• Narrow areas of Steadman and Sequatchie soils along drainageways and in depressions
• Isolated areas of Talbott soils and rock outcrop at the base of slopes

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Susceptibility to erosion and the slope are the main limitations affecting cultivated crops.
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Moderately suited
Suitability for hayland: Poorly suited
Management measures and considerations:
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
• The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
• Seedling mortality rates may be affected by increased rates of surface water runoff and a lower moisture supply. Reinforcement plantings can be made until a desired stand is attained.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slope is the main limitation affecting urban uses.
• Designing structures and septic tank absorption fields so that they conform to the natural slope or building in the less sloping areas helps to improve soil performance.
• Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.

Interpretive Group

Land capability classification: 4e

DeB2—Dewey silt loam, 2 to 5 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits
Shape of areas: Elongated or irregular
Size of areas: 5 to 20 acres

Composition

Dewey soil and similar soils: 90 to 95 percent
Dissimilar soils: 5 to 10 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 8 inches—dark reddish brown silt loam

Subsurface layer:
8 to 20 inches—reddish brown clay loam

Subsoil:
20 to 31 inches—red clay
31 to 60 inches—red and dark red clay

Minor Soils

Similar soils:
• Intermingled areas of Decatur, Etowah, and Fullerton soils

Dissimilar soils:
• Narrow areas of Steadman and Sequatchie soils along drainageways and in depressions

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability: Well suited
Management measures and considerations:
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Moderately suited
Management measures and considerations:
• Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
• Reinforcing foundations, footings, and basements helps to prevent damage caused by shrinking and swelling.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.

Interpretive Group

Land capability classification: 2e

DeC2—Dewey silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 5 to 20 acres

Composition

Dewey soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 8 inches—dark reddish brown silt loam

Subsurface layer:
8 to 20 inches—reddish brown clay loam

Subsoil:
20 to 31 inches—red clay
31 to 60 inches—red and dark red clay

Minor Soils

Similar soils:
• Intermingled areas of Decatur, Etowah, and Fullerton soils

Dissimilar soils:
• Narrow areas of Steadman and Sequatchie soils along drainageways and in depressions

Use and Management

Cropland

Suitability: Moderately suited
Management measures and considerations:
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
• In the steeper areas, the slope may limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Moderately suited
Management measures and considerations:
• Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
• Reinforcing foundations, footings, and basements helps to prevent damage caused by shrinking and swelling.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.
• Grading or shaping land prior to construction helps to minimize the damage from surface water and prevent erosion.

Interpretive Group

Land capability classification: 3e

DeD2—Dewey silt loam, 12 to 25 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 5 to 20 acres

Composition

Dewey soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 8 inches—dark reddish brown silt loam

Subsurface layer:
8 to 20 inches—reddish brown clay loam

Subsoil:
20 to 31 inches—red clay
31 to 60 inches—red and dark red clay

Minor Soils

Similar soils:
• Intermingled areas of Decatur, Etowah, and Fullerton soils

Dissimilar soils:
• Narrow areas of Steadman and Sequatchie soils along drainageways and in depressions
• Isolated areas of Talbott soils and rock outcrop at the base of slopes

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:
• Susceptibility to erosion and the slope are the main limitations affecting cultivated crops.
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Moderately suited
Suitability for hayland: Poorly suited
Management measures and considerations:
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
• The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
• Seedling mortality rates may be affected by increased rates of surface water runoff and a lower moisture supply. Reinforcement plantings can be made until a desired stand is attained.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slope is the main limitation affecting urban uses.
• Designing structures and septic tank absorption fields so that they conform to the natural slope or building in the less sloping areas helps to improve soil performance.
• Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.

Interpretive Group

Land capability classification: 4e

DhD—Ditney sandy loam, 12 to 25 percent slopes

Setting

Landscape: Blue Ridge
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 10 to 90 acres

Composition

Ditney soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Low or moderate
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: 20 to 40 inches

Typical Profile

Surface layer:
0 to 4 inches—brown sandy loam

Subsurface layer:
4 to 9 inches—yellowish brown sandy loam

Subsoil:
9 to 29 inches—yellowish brown and strong brown sandy loam

Underlying material:
29 to 36 inches—strong brown sandy loam

Bedrock:
36 inches—hard metasandstone

Minor Soils

Similar soils:
• Intermingled areas of Soco soils
• Intermingled areas of soils that have more rock fragments throughout than the Ditney soil

Dissimilar soils:
- Intermingled areas of Unicoi soils
- Widely scattered areas of rock outcrop

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
- Susceptibility to erosion and the slope are the main limitations affecting cultivated crops.
- The potential for erosion is greater when conventional tillage is used.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
- Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Moderately suited
Suitability for hayland: Poorly suited
Management measures and considerations:
- The slope limits the use of equipment for harvesting hay crops.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
- The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
- The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
- Seedling mortality rates may be affected by increased rates of surface water runoff and a lower moisture supply. Reinforcement plantings can be made until a desired stand is attained.
- Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
- Proper site preparation helps to reduce plant competition from undesirable species.
- See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
- The slope is the main limitation affecting urban uses.
- Designing structures and septic tank absorption fields so that they conform to the natural slope or building in the less sloping areas helps to improve soil performance.
- Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.

Interpretive Group

Land capability classification: 6e

Du—Dunning silty clay loam, occasionally flooded

Setting

Landscape: Ridges and Valleys
Landform: Flood plains
Landform position: Linear slopes and depressions
Shape of areas: Roughly oval or irregular
Size of areas: 5 to 70 acres
Slope range: 0 to 2 percent

Composition

Dunning soil and similar soils: 90 to 95 percent
Dissimilar soils: 5 to 10 percent

Soil Properties and Qualities

Drainage class: Poorly drained
Permeability: Slow
Available water capacity: High
Depth to seasonal high water table: 0 to 6 inches from December to May
Flooding: Occasional
Reaction: Moderately acid to slightly alkaline
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 12 inches—very dark gray silty clay loam

Subsoil:
12 to 34 inches—dark gray clay that has strong brown and yellowish brown masses of iron concentration

Underlying material:
34 to 60 inches—dark gray gravelly clay that has yellowish brown masses of iron concentration

Minor Soils

Similar soils:
• Intermingled areas of soils that have a lighter colored surface layer than the Dunning soil
• Intermingled areas of Dunning soils that have a buried surface layer

Dissimilar soils:
• Intermingled areas of Leadvale soils
• Intermingled areas of Steadman soils
• Intermingled areas of somewhat poorly drained soils

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• The main limitations affecting cultivated crops are wetness and flooding.
• Wetness delays planting and hinders harvesting operations in most years.
• There is a potential for crop damage from flooding.

Pasture and hayland

Suitability: Moderately suited
Management measures and considerations:
• The main limitations affecting pasture and hayland are wetness and flooding.
• Livestock grazing when the soil is wet can result in soil compaction and loss of productivity.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• The use of equipment is severely limited by soil wetness and the surface texture. Excessive soil damage caused by rutting and miring occurs when the soil is wet. Forestry operations should be planned for drier times of the year. Where possible, roads should be located on nearby soils that are better suited to roads.
• Seedling mortality rates may be affected by soil wetness. Preparing the seedbed so that seedlings can be planted on ridges helps to overcome the soil wetness. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of soil wetness. This hazard may be reduced by applying a carefully regulated thinning program.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
• Flooding and wetness are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome. A site that is not subject to flooding and wetness should be selected.

Interpretive Group

Land capability classification: 3w

Dv—Dunning silt loam, overwash, occasionally flooded

Setting

Landscape: Ridges and Valleys
Landform: Flood plains
Landform position: Linear slopes and depressions
Shape of areas: Oval or irregular
Size of areas: 5 to 70 acres
Slope range: 0 to 2 percent

Composition

Dunning soil and similar soils: 80 to 90 percent
Dissimilar soils: 10 to 20 percent

Soil Properties and Qualities

Drainage class: Poorly drained
Permeability: Slow
Available water capacity: High
Depth to seasonal high water table: 0 to 12 inches from December to May
Flooding: Occasional
Reaction: Moderately acid to slightly alkaline
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 3 inches—dark brown silt loam
3 to 11 inches—brown silt loam

Buried surface layer:
11 to 20 inches—dark grayish brown clay that has strong brown masses of iron concentration

Subsoil:
20 to 29 inches—very dark grayish brown clay that has yellowish brown masses of iron concentration
29 to 40 inches—grayish brown clay that has yellowish brown masses of iron concentration

Underlying material:
40 to 60 inches—yellowish brown clay that has yellowish brown masses of iron concentration

Minor Soils

Similar soils:
• Intermingled areas of soils that have a lighter colored surface layer than the Dunning soil

Dissimilar soils:
• Intermingled areas of Leadvale soils
• Intermingled areas of Steadman soils
• Intermingled areas of somewhat poorly drained soils

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• The main limitations affecting cultivated crops are wetness and flooding.
• Wetness delays planting and hinders harvesting operations in most years.
• There is a potential for crop damage from flooding.

Pasture and hayland

Suitability: Moderately suited
Management measures and considerations:
• The main limitations affecting pasture and hayland are wetness and flooding.
• Livestock grazing when the soil is wet can result in soil compaction and loss of productivity.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• The use of equipment is severely limited by soil wetness.
• Excessive soil damage caused by rutting and miring occurs when the soil is wet. Forestry operations should be planned for drier times of the year. Where possible, roads should be located on nearby soils that are better suited to roads.
• Seedling mortality rates may be affected by soil wetness. Preparing the seedbed so that seedlings can be planted on ridges helps to overcome the wetness limitation. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of soil wetness. This hazard may be reduced by applying a carefully regulated thinning program.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
• Flooding and wetness are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome. A site that is not subject to flooding and wetness should be selected.

Interpretive Group

Land capability classification: 3w

EtB—Etowah loam, 2 to 5 percent slopes

Setting

Landscape: Ridges and Valleys
Landform: Stream terraces and alluvial fans
Landform position: Summits, footslopes, and toeslopes
Shape of areas: Roughly oval or elongated
Size of areas: 4 to 25 acres

Composition

Etowah soil and similar soils: 85 to 90 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 10 inches—dark brown loam
10 to 14 inches—very dark grayish brown loam

Subsurface layer:
14 to 24 inches—brown clay loam

Subsoil:
24 to 60 inches—strong brown and yellowish red clay loam

Minor Soils

Similar soils:
- Intermingled areas of Dewey and Waynesboro soils
- Intermingled areas of soils that have less clay in the subsoil than the Etowah soil

Dissimilar soils:
- Scattered small depressions that are ponded for short periods
- Intermingled areas of soils that have a cobbly or gravelly surface layer

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
- Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability: Well suited
Management measures and considerations:
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
- This soil has few limitations affecting forest management.
- Proper site preparation helps to reduce plant competition from undesirable species.
- See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Well suited
Management measures and considerations:
- Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
- Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.

Interpretive Group

Land capability classification: 2e

EtC—Etowah loam, 5 to 12 percent slopes

Setting

Landscape: Ridges and Valleys
Landform: Stream terraces and alluvial fans
Landform position: Summits, footslopes, and toeslopes
Shape of areas: Roughly oval or elongated
Size of areas: 4 to 25 acres

Composition

Etowah soil and similar soils: 85 to 90 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 10 inches—dark brown loam
10 to 14 inches—very dark grayish brown loam

Subsurface layer:
14 to 24 inches—brown clay loam

Subsoil:
24 to 60 inches—strong brown and yellowish red clay loam

Minor Soils

Similar soils:
- Intermingled areas of Dewey and Waynesboro soils

• Intermingled areas of soils that have less clay in the subsoil than the Etowah soil

Dissimilar soils:
• Scattered small depressions that are ponded for short periods
• Intermingled areas of soils that have a cobbly or gravelly surface layer

Use and Management

Cropland

Suitability: Moderately suited
Management measures and considerations:
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
• In the steeper areas, the slope may limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Moderately suited
Management measures and considerations:
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.
• Grading or shaping land prior to construction helps to minimize the damage from surface water and prevent erosion.

Interpretive Group

Land capability classification: 3e

FuC2—Fullerton gravelly silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Roughly oval or irregular
Size of areas: 4 to 50 acres

Composition

Fullerton soil and similar soils: 85 to 90 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 7 inches—brown gravelly silt loam

Subsurface layer:
7 to 16 inches—yellowish brown gravelly silt loam

Subsoil:
16 to 34 inches—yellowish red gravelly clay
34 to 60 inches—red gravelly clay

Minor Soils

Similar soils:
• Intermingled areas of Dewey soils
• Intermingled areas of soils that have more rock fragments throughout than the Fullerton soil

Dissimilar soils:
• Scattered depressions and sinks that are ponded for short periods
• Talbott soils near slope breaks

Use and Management

Cropland

Suitability: Moderately suited

Management measures and considerations:
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.
• The gravelly surface layer may be a hindrance to tillage equipment.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
• In the steeper areas, the slope may limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Moderately suited
Management measures and considerations:
• Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
• Reinforcing foundations, footings, and basements helps to prevent damage caused by shrinking and swelling.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.
• Grading or shaping land prior to construction helps to minimize the damage from surface water and prevent erosion.

Interpretive Group

Land capability classification: 3e

FuD2—Fullerton gravelly silt loam, 12 to 25 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Roughly oval or irregular
Size of areas: 4 to 50 acres

Composition

Fullerton soil and similar soils: 85 to 90 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 7 inches—brown gravelly silt loam

Subsurface layer:
7 to 16 inches—yellowish brown gravelly silt loam

Subsoil:
16 to 34 inches—yellowish red gravelly clay
34 to 60 inches—red gravelly clay

Minor Soils

Similar soils:
• Intermingled areas of Dewey soils
• Intermingled areas of soils that have more rock fragments throughout than the Fullerton soil

Dissimilar soils:
• Talbott soils near slope breaks

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Susceptibility to erosion and the slope are the main limitations affecting cultivated crops.
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to

control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.
• The gravelly surface layer may be a hindrance to tillage equipment.

Pasture and hayland

Suitability for pasture: Moderately suited
Suitability for hayland: Poorly suited
Management measures and considerations:
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
• The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
• Seedling mortality rates may be affected by increased rates of surface water runoff, lower moisture supply, and the gravelly surface texture. Reinforcement plantings can be made until a desired stand is attained.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slope is the main limitation affecting urban uses.
• Designing structures and septic tank absorption fields so that they conform to the natural slope or building in the less sloping areas helps to improve soil performance.
• Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.

Interpretive Group

Land capability classification: 4e

FuE2—Fullerton gravelly silt loam, 25 to 60 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Side slopes
Shape of areas: Roughly rectangular or irregular
Size of areas: 4 to 50 acres

Composition

Fullerton soil and similar soils: 85 to 90 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 7 inches—brown gravelly silt loam

Subsurface layer:
7 to 16 inches—yellowish brown gravelly silt loam

Subsoil:
16 to 34 inches—yellowish red gravelly clay
34 to 60 inches—red gravelly clay

Minor Soils

Similar soils:
• Intermingled areas of Dewey soils
• Intermingled areas of soils that have more rock fragments throughout than the Fullerton soil

Dissimilar soils:
• Talbott soils near slope breaks

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Susceptibility to erosion and the slope are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability for pasture: Poorly suited
Suitability for hayland: Unsuited
Management measures and considerations:
• This soil is difficult to manage for pasture and hayland because of the slope.
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Careful planning is needed in forestry operations to minimize the hazard of erosion and maintain water quality.
• The hazard of erosion can be reduced by locating roads and trails on the contour, protecting permanent access roads through the use of gravel, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope may limit the practical use of conventional equipment.
• Logs can be cabled or winched to adjacent areas that have smoother slopes, and planting can be done by hand.
• Seedling mortality rates may be affected by increased rates of surface water runoff, lower moisture supply, and the gravelly surface texture. Reinforcement plantings can be made until a desired stand is attained.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slope is a severe limitation affecting urban uses. This limitation is difficult and expensive to overcome.

Interpretive Group

Land capability classification: 7e

HnB—Holston loam, 2 to 5 percent slopes

Setting

Landscape: Ridges and Valleys
Landform: High stream terraces
Landform position: Summits
Shape of areas: Roughly oval or irregular
Size of areas: 4 to 50 acres

Composition

Holston soil and similar soils: 85 to 90 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 10 inches—brown loam

Subsurface layer:
10 to 18 inches—yellowish brown loam

Subsoil:
18 to 38 inches—yellowish brown and strong brown clay loam
38 to 60 inches—strong brown and yellowish red clay

Minor Soils

Similar soils:
• Intermingled areas of Dewey, Etowah, and Waynesboro soils

Dissimilar soils:
• Steadman soils along adjacent drainageways

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability: Well suited
Management measures and considerations:
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Well suited
Management measures and considerations:
• Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.

Interpretive Group

Land capability classification: 2e

HnC—Holston loam, 5 to 12 percent slopes

Setting

Landscape: Ridges and Valleys
Landform: High stream terraces
Landform position: Summits and side slopes
Shape of areas: Roughly oval or irregular
Size of areas: 4 to 50 acres

Composition

Holston soil and similar soils: 85 to 90 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 10 inches—brown loam

Subsurface layer:
10 to 18 inches—yellowish brown loam

Subsoil:
18 to 38 inches—yellowish brown and strong brown clay loam
38 to 60 inches—strong brown and yellowish red clay

Minor Soils

Similar soils:
• Intermingled areas of Dewey, Etowah, and Waynesboro soils

Dissimilar soils:
• Steadman soils along adjacent drainageways

Use and Management

Cropland

Suitability: Moderately suited
Management measures and considerations:
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
• In the steeper areas, the slope may limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited

Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Moderately suited
Management measures and considerations:
• Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.
• Grading or shaping land prior to construction helps to minimize the damage from surface water and prevent erosion.

Interpretive Group

Land capability classification: 3e

JcD—Junaluska-Cataska complex, 12 to 25 percent slopes

Setting

Landscape: Blue Ridge
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 10 to several hundred acres

Composition

Junaluska soil and similar soils: 50 to 60 percent
Cataska soil and similar soils: 25 to 35 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Junaluska—well drained; Cataska—excessively drained
Permeability: Junaluska—moderate; Cataska—moderately rapid or rapid
Available water capacity: Junaluska—low or moderate; Cataska—very low
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Junaluska—extremely acid to moderately acid; Cataska—extremely acid to strongly acid
Depth to bedrock: Junaluska—20 to 40 inches; Cataska—10 to 20 inches

Typical Profile

Junaluska

Surface layer:
0 to 3 inches—yellowish brown silt loam

Subsoil:
3 to 12 inches—strong brown silty clay loam
12 to 29 inches—strong brown and yellowish red channery silty clay loam

Bedrock:
29 to 40 inches—soft, fractured metasiltstone

Cataska

Surface layer:
0 to 2 inches—dark yellowish brown channery silt loam

Subsoil:
2 to 8 inches—yellowish brown very channery silt loam
8 to 12 inches—dark yellowish brown extremely channery silt loam

Bedrock:
12 to 40 inches—soft, fractured slate

Minor Soils

Similar soils:
• Intermingled areas of soils that have fewer rock fragments throughout than the Junaluska and Cataska soils
• Intermingled areas of Sylco soils

Dissimilar soils:
• Intermingled areas of soils that have soft bedrock at a depth of more than 40 inches

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Susceptibility to erosion, the slope, the restricted rooting depth, and the very low or low available water capacity are the main limitations affecting cultivated crops.
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Moderately suited
Suitability for hayland: Poorly suited
Management measures and considerations:
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
• The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
• Seedling mortality rates may be high due to the limited rooting depth and very low or low available water capacity. Available moisture may be further reduced on the warmer aspects. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slope and depth to bedrock are the main limitations affecting urban uses.
• Designing structures and septic tank absorption fields so that they conform to the natural slope or building in the less sloping areas helps to improve soil performance.
• The slope and depth to bedrock are severe limitations affecting septic tank absorption fields. These limitations are difficult and expensive to overcome.
• Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.

Interpretive Group

Land capability classification: 6s

LeB—Leadvale silt loam, 2 to 5 percent slopes

Setting

Landscape: Ridges and Valleys
Landform: Stream terraces and alluvial fans
Landform position: Footslopes
Shape of areas: Elongated or irregular
Size of areas: 5 to 30 acres

Composition

Leadvale soil: 85 to 90 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Slow or moderately slow
Available water capacity: Moderate or high
Depth to seasonal high water table: 24 to 36 inches from January to April
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 48 inches

Typical Profile

Surface layer:
0 to 9 inches—brown silt loam

Subsoil:
9 to 17 inches—brownish yellow silt loam
17 to 31 inches—yellowish brown silty clay loam
31 to 55 inches—yellowish brown clay that has light brownish gray masses of iron depletion

Bedrock:
55 to 62 inches—soft, weakly consolidated shale

Minor Soils

Dissimilar soils:
• Intermingled areas of Holston and Sequatchie soils
• Intermingled areas of somewhat poorly drained soils

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Wetness may delay planting or hinder harvesting operations.
• Conservation tillage, crop residue management,

contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.

Pasture and hayland

Suitability: Well suited
Management measures and considerations:
• Livestock grazing when the soil is wet can result in soil compaction and loss of productivity.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slow permeability, wetness, and low soil strength are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.
• Because of the slow permeability and wetness, the careful planning and design of septic tank absorption fields may be required.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.

Interpretive Group

Land capability classification: 2e

LnB—Lonon gravelly loam, 2 to 5 percent slopes

Setting

Landscape: Blue Ridge
Landform: Colluvial or alluvial fans
Landform position: Footslopes
Shape of areas: Roughly rectangular or irregular
Size of areas: 4 to 50 acres

Composition

Lonon soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 8 inches—brown gravelly loam

Subsurface layer:
8 to 13 inches—yellowish brown gravelly loam

Subsoil:
13 to 22 inches—yellowish red clay loam
22 to 47 inches—yellowish red gravelly clay loam
47 to 60 inches—yellowish red gravelly loam

Minor Soils

Similar soils:
• Intermingled areas of soils that have browner subsoils than the Lonon soil
• Intermingled areas of Braddock soils

Dissimilar soils:
• Intermingled areas of Lostcove soils

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability: Well suited
Management measures and considerations:
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Well suited
Management measures and considerations:
• Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.

Interpretive Group

Land capability classification: 2e

LnC—Lonon gravelly loam, 5 to 12 percent slopes

Setting

Landscape: Blue Ridge
Landform: Colluvial or alluvial fans
Landform position: Footslopes and toeslopes
Shape of areas: Roughly rectangular or irregular
Size of areas: 4 to 50 acres

Composition

Lonon soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 8 inches—brown gravelly loam

Subsurface layer:
8 to 13 inches—yellowish brown gravelly loam

Subsoil:
13 to 22 inches—yellowish red clay loam
22 to 47 inches—yellowish red gravelly clay loam
47 to 60 inches—yellowish red gravelly loam

Minor Soils

Similar soils:
• Intermingled areas of soils that have browner subsoils than the Lonon soil
• Intermingled areas of Braddock soils

Dissimilar soils:
• Intermingled areas of Lostcove soils

Use and Management

Cropland

Suitability: Moderately suited
Management measures and considerations:
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
• In the steeper areas, the slope may limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Moderately suited
Management measures and considerations:
• Because of the restricted soil permeability, the

careful planning and design of septic tank absorption fields may be required.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.
• Grading or shaping land prior to construction helps to minimize the damage from surface water and prevent erosion.

Interpretive Group

Land capability classification: 3e

LnD—Lonon gravelly loam, 12 to 25 percent slopes

Setting

Landscape: Blue Ridge
Landform: Colluvial or alluvial fans
Landform position: Footslopes and toeslopes
Shape of areas: Roughly rectangular or irregular
Size of areas: 4 to 50 acres

Composition

Lonon soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to moderately acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 8 inches—brown gravelly loam

Subsurface layer:
8 to 13 inches—yellowish brown gravelly loam

Subsoil:
13 to 22 inches—yellowish red clay loam
22 to 47 inches—yellowish red gravelly clay loam
47 to 60 inches—yellowish red gravelly loam

Minor Soils

Similar soils:
• Intermingled areas of soils that have browner subsoils than the Lonon soil
• Intermingled areas of Braddock soils

Dissimilar soils:
• Intermingled areas of Lostcove soils

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Susceptibility to erosion and the slope are the main limitations affecting cultivated crops.
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Moderately suited
Suitability for hayland: Poorly suited
Management measures and considerations:
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
• The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slope is the main limitation affecting urban uses.

• Designing structures and septic tank absorption fields so that they conform to the natural slope or building in the less sloping areas helps to improve soil performance.
• Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.

Interpretive Group

Land capability classification: 4e

LsC—Lostcove very cobbly loam, 5 to 12 percent slopes, extremely bouldery

Setting

Landscape: Blue Ridge
Landform: Colluvial fans
Landform position: Footslopes and toeslopes
Shape of areas: Elongated or roughly rectangular
Size of areas: 5 to 75 acres

Composition

Lostcove soil and similar soils: 85 to 90 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low or moderate
Depth to seasonal high water table: 60 to 72 inches from October to April
Flooding: None
Reaction: Extremely acid to moderately acid
Depth to bedrock: More than 72 inches

Typical Profile

Surface layer:
0 to 8 inches—brown very cobbly loam

Subsoil:
8 to 31 inches—brown and strong brown very cobbly clay loam
31 to 72 inches—strong brown and yellowish brown very cobbly loam

Minor Soils

Similar soils:
• Intermingled areas of Lostcove soils that have fewer boulders on the surface
• Intermingled areas of Northcove soils

Dissimilar soils:
• Intermingled areas of Braddock and Lonon soils

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Susceptibility to erosion, the slope, the cobbly surface layer, and boulders on the soil surface are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability for pasture: Poorly suited
Suitability for hayland: Unsuited
Management measures and considerations:
• The very cobbly surface layer and boulders on the soil surface may increase the difficulty of pasture establishment and maintenance.
• The boulders on the soil surface limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• The numerous boulders and stones on the soil surface severely limit the use of equipment. Operating wheeled equipment, building access roads, harvesting timber, and the mechanized planting of seedlings are very difficult and expensive in most places.
• Seedling mortality rates may be high due to the numerous boulders, stones, and cobbles on and in the surface layer.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• Boulders and stones on the soil surface are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: 7s

LsD—Lostcove very cobbly loam, 12 to 25 percent slopes, extremely bouldery

Setting

Landscape: Blue Ridge
Landform: Colluvial fans
Landform position: Footslopes and toeslopes
Shape of areas: Elongated or roughly rectangular
Size of areas: 5 to 75 acres

Composition

Lostcove soil and similar soils: 85 to 90 percent
Dissimilar soils: 10 to 20 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Low or moderate
Depth to seasonal high water table: 60 to 72 inches from October to April
Flooding: None
Reaction: Extremely acid to moderately acid
Depth to bedrock: More than 72 inches

Typical Profile

Surface layer:
0 to 8 inches—brown very cobbly loam

Subsoil:
8 to 31 inches—brown and strong brown very cobbly clay loam
31 to 72 inches—strong brown and yellowish brown very cobbly loam

Minor Soils

Similar soils:
- Intermingled areas of Lostcove soils that have fewer boulders on the surface
- Intermingled areas of Northcove soils

Dissimilar soils:
- Intermingled areas of Braddock and Lonon soils

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
- Susceptibility to erosion, the slope, the cobbly surface layer, and boulders on the soil surface are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability for pasture: Poorly suited
Suitability for hayland: Unsuited
Management measures and considerations:
- The very cobbly surface layer and boulders on the soil surface may increase the difficulty of pasture establishment and maintenance.
- The slope and boulders on the soil surface limit the use of equipment for harvesting hay crops.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
- The numerous boulders and stones on the soil surface severely limit the use of equipment. Operating wheeled equipment, building access roads, harvesting timber, and the mechanized planting of seedlings are very difficult and expensive in most places.
- Seedling mortality rates may be high due to the numerous boulders, stones, and cobbles on and in the surface layer.
- Proper site preparation helps to reduce plant competition from undesirable species.
- See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
- Boulders and stones on the soil surface and the slope are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: 7s

MtC2—Montevallo channery silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 5 to 20 acres

Composition

Montevallo soil and similar soils: 85 to 90 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very low or low
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid to moderately acid
Depth to bedrock: 10 to 20 inches

Typical Profile

Surface layer:
0 to 5 inches—brown channery silt loam

Subsoil:
5 to 17 inches—yellowish brown very channery silt loam

Bedrock:
17 to 38 inches—soft, fractured shale
38 inches—hard shale

Minor Soils

Similar soils:
• Intermingled areas of soils that have fewer rock fragments throughout than the Montevallo soil

Dissimilar soils:
• Intermingled areas of soils that have soft bedrock at a depth of less than 10 inches
• Widely scattered areas of rock outcrop
• Intermingled areas of Nonaburg soils

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Susceptibility to erosion, the shallow rooting zone, and the very low or low available water capacity are the main limitations affecting cultivated crops.
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Moderately suited
Suitability for hayland: Poorly suited
Management measures and considerations:
• The shallow rooting depth and very low or low available water capacity are the main limitations affecting pasture and hayland.
• In the steeper areas, the slope may limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• Seedling mortality rates may be high due to the limited rooting depth and very low or low available water capacity. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• Depth to bedrock is a severe limitation affecting urban uses. This limitation is difficult and expensive to overcome.
• Grading or shaping land prior to construction helps to minimize the damage from surface water and prevent erosion.

Interpretive Group

Land capability classification: 4e

MtD2—Montevallo channery silt loam, 12 to 25 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 5 to 20 acres

Composition

Montevallo soil and similar soils: 85 to 90 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Moderate
Available water capacity: Very low or low
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid to moderately acid
Depth to bedrock: 10 to 20 inches

Typical Profile

Surface layer:
0 to 5 inches—brown channery silt loam

Subsoil:
5 to 17 inches—yellowish brown very channery silt loam

Bedrock:
17 to 38 inches—soft, fractured shale
38 inches—hard shale

Minor Soils

Similar soils:
- Intermingled areas of soils that have fewer rock fragments throughout than the Montevallo soil

Dissimilar soils:
- Intermingled areas of soils that have soft bedrock at a depth of less than 10 inches
- Widely scattered areas of rock outcrop
- Intermingled areas of Nonaburg soils

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
- Susceptibility to erosion, the shallow rooting zone, the very low or low available water capacity, and the slope are the main limitations affecting cultivated crops.
- The potential for erosion is greater when conventional tillage is used.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
- Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability: Poorly suited
Management measures and considerations:
- This soil is difficult to manage for pasture and hayland because of the slope, shallow rooting depth, and very low or low available water capacity.
- The slope limits the use of equipment for harvesting hay crops.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
- The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
- The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
- Seedling mortality rates may be high due to the limited rooting depth and very low or low available water capacity. Available moisture may be further reduced on the warmer aspects. Reinforcement plantings can be made until a desired stand is attained.
- Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
- See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
- Depth to bedrock and the slope are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: 6e

MuC2—Muse silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Colluvial fans
Landform position: Footslopes and toeslopes
Shape of areas: Roughly rectangular or irregular
Size of areas: 4 to 50 acres

Composition

Muse soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Slow
Available water capacity: High
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 40 inches

Typical Profile

Surface layer:
0 to 6 inches—brown silt loam

Subsurface layer:
6 to 14 inches—dark yellowish brown silt loam

Subsoil:
14 to 38 inches—strong brown and yellowish red clay
38 to 53 inches—strong brown silty clay

Underlying material:
53 to 60 inches—strong brown silty clay

Minor Soils

Similar soils:
- Intermingled areas of soils that have loamy textures in the subsoil
- Intermingled areas of soils that have more rock fragments throughout than the Muse soil

Dissimilar soils:
- Townley soils on adjacent side slopes

Use and Management

Cropland

Suitability: Moderately suited
Management measures and considerations:
- The potential for erosion is greater when conventional tillage is used.
- Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
- Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
- In the steeper areas, the slope may limit the use of equipment for harvesting hay crops.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
- This soil has few limitations affecting forest management.
- Proper site preparation helps to reduce plant competition from undesirable species.
- See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Moderately suited
Management measures and considerations:
- Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
- Reinforcing foundations, footings, and basements helps to prevent damage caused by shrinking and swelling.
- Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.
- Grading or shaping land prior to construction helps to minimize the damage from surface water and prevent erosion.

Interpretive Group

Land capability classification: 3e

MwE—Muskingum-Chiswell complex, 25 to 60 percent slopes

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 10 to 100 acres

Composition

Muskingum soil and similar soils: 50 to 60 percent
Chiswell soil and similar soils: 30 to 40 percent
Dissimilar soils: 5 to 10 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Muskingum—low or moderate; Chiswell—very low
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Muskingum—very strongly acid to moderately acid; Chiswell—extremely acid to moderately acid
Depth to bedrock: Muskingum—20 to 40 inches; Chiswell—10 to 20 inches

Typical Profile

Muskingum

Surface layer:
0 to 3 inches—brown channery loam

Subsoil:
3 to 10 inches—brown channery loam
10 to 22 inches—brown loam

Underlying material:
22 to 29 inches—brown channery loam

Bedrock:
29 to 40 inches—soft, fractured fine-grained sandstone

Chiswell

Surface layer:
0 to 2 inches—dark brown channery loam

Subsoil:
2 to 16 inches—yellowish brown and brown very channery loam

Bedrock:
16 to 60 inches—soft, fractured interbedded siltstone and fine-grained sandstone

Minor Soils

Similar soils:
• Intermingled areas of soils that have fewer rock fragments throughout than the Muskingum and Chiswell soils
• Intermingled areas of soils that have redder colors in the subsoil than the Muskingum and Chiswell soils

Dissimilar soils:
• Intermingled areas of soils that have soft bedrock at a depth of more than 40 inches

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Susceptibility to erosion, the restricted rooting zone, the very low or low available water capacity, and the slope are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability for pasture: Poorly suited
Suitability for hayland: Unsuited
Management measures and considerations:
• These soils are difficult to manage for pasture and hayland because of the slope, shallow rooting depth, and low available water capacity.
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Careful planning is needed in forestry operations to minimize the hazard of erosion and maintain water quality.
• The hazard of erosion can be reduced by locating roads and trails on the contour, protecting permanent access roads through the use of gravel, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope may limit the practical use of conventional equipment.
• Logs can be cabled or winched to adjacent areas that have smoother slopes, and planting can be done by hand.
• Seedling mortality rates may be high due to the limited rooting depth and very low or low available water capacity. Available moisture may be further reduced on the warmer aspects. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.

• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
• Depth to bedrock and the slope are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: 7e

NnC3—Nonaburg channery silt loam, 5 to 12 percent slopes, severely eroded, rocky

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits
Shape of areas: Irregular
Size of areas: 5 to 200 acres

Composition

Nonaburg soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very low
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Slightly acid to slightly alkaline
Depth to bedrock: 8 to 20 inches

Typical Profile

Surface layer:
0 to 2 inches—brown channery silt loam

Subsurface layer:
2 to 6 inches—strong brown channery silt loam

Subsoil:
6 to 14 inches—strong brown channery silty clay

Bedrock:
14 to 41 inches—soft, fractured calcareous shale
41 inches—hard calcareous shale

Minor Soils

Similar soils:
• Intermingled areas of soils that are moderately eroded
• Widely scattered areas of limestone or shale rock outcrop

Dissimilar soils:
• Townley soils on ridge summits

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Susceptibility to erosion, the restricted rooting zone, and the very low available water capacity are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability for pasture: Moderately suited
Suitability for hayland: Poorly suited
Management measures and considerations:
• The shallow rooting depth and very low available water capacity are the main limitations affecting pasture and hayland.
• The slope and scattered areas of rock outcrop limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
• Seedling mortality rates may be high due to the limited rooting depth and very low available water capacity. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• Depth to bedrock is a severe limitation affecting

urban uses. This limitation is difficult and expensive to overcome.
• Grading or shaping land prior to construction helps to minimize the damage from surface water and prevent erosion.

Interpretive Group

Land capability classification: 6s

NnD3—Nonaburg channery silt loam, 12 to 25 percent slopes, severely eroded, rocky

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

Nonaburg soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very low
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Slightly acid to slightly alkaline
Depth to bedrock: 8 to 20 inches

Typical Profile

Surface layer:
0 to 2 inches—brown channery silt loam

Subsurface layer:
2 to 6 inches—strong brown channery silt loam

Subsoil:
6 to 14 inches—strong brown channery silty clay

Bedrock:
14 to 41 inches—soft, fractured calcareous shale
41 inches—hard calcareous shale

Minor Soils

Similar soils:
• Intermingled areas of soils that are moderately eroded
• Widely scattered areas of limestone or shale rock outcrop

Dissimilar soils:
• Townley soils on ridge summits

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Susceptibility to erosion, the restricted rooting zone, the very low available water capacity, and the slope are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability: Poorly suited
Management measures and considerations:
• This soil is difficult to manage for pasture and hayland because of the slope, shallow rooting depth, and very low available water capacity.
• The slope and scattered areas of rock outcrop limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
• The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
• Seedling mortality rates may be high due to the limited rooting depth and very low available water capacity. Available moisture may be further reduced on the warmer aspects. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited

Management measures and considerations:
• The slope and depth to bedrock are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: 7s

NnE3—Nonaburg channery silt loam, 25 to 60 percent slopes, severely eroded, rocky

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

Nonaburg soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Very low
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Slightly acid to slightly alkaline
Depth to bedrock: 8 to 20 inches

Typical Profile

Surface layer:
0 to 2 inches—brown channery silt loam

Subsurface layer:
2 to 6 inches—strong brown channery silt loam

Subsoil:
6 to 14 inches—strong brown channery silty clay

Bedrock:
14 to 41 inches—soft, fractured calcareous shale
41 inches—hard calcareous shale

Minor Soils

Similar soils:
• Intermingled areas of soils that are moderately eroded
• Widely scattered areas of limestone or shale rock outcrop

Dissimilar soils:
• Townley soils on ridge summits

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Susceptibility to erosion, the restricted rooting zone, the very low available water capacity, and the slope are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability for pasture: Poorly suited
Suitability for hayland: Unsuited
Management measures and considerations:
• This soil is difficult to manage for pasture and hayland because of the slope, shallow rooting depth, and very low available water capacity.
• The slope and scattered areas of rock outcrop limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Careful planning is needed in forestry operations to minimize the hazard of erosion and maintain water quality.
• The hazard of erosion can be reduced by locating roads and trails on the contour, protecting permanent access roads through the use of gravel, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope may limit the practical use of conventional equipment.
• Logs can be cabled or winched to adjacent areas that have smoother slopes, and planting can be done by hand.
• Seedling mortality rates may be high due to the limited rooting depth and very low available water capacity. Available moisture may be further reduced on the warmer aspects. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.

• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slope and depth to bedrock are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: 7s

NoF—Northcove stony sandy loam, 35 to 50 percent slopes, bouldery

Setting

Landscape: Blue Ridge
Landform: Colluvial fans and coves
Landform position: Footslopes and toeslopes
Shape of areas: Long and narrow or roughly rectangular
Size of areas: 5 to 100 acres

Composition

Northcove soil and similar soils: 85 to 90 percent
Dissimilar soils: 10 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Low or moderate
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to moderately acid
Depth to bedrock: More than 72 inches

Typical Profile

Surface layer:
0 to 5 inches—dark brown stony sandy loam

Subsoil:
5 to 18 inches—dark yellowish brown very cobbly sandy loam
18 to 40 inches—yellowish brown very cobbly loam

Underlying material:
40 to 72 inches—yellowish brown extremely cobbly sandy loam

Minor Soils

Similar soils:
• Intermingled areas of Northcove soils that have fewer stones on the surface

Dissimilar soils:
• Intermingled areas of Braddock and Lonon soils

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Susceptibility to erosion, the slope, the stony surface layer, and boulders on the soil surface are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability for pasture: Poorly suited
Suitability for hayland: Unsuited
Management measures and considerations:
• The stony surface layer and boulders on the soil surface may increase the difficulty of pasture establishment and maintenance.
• The slope and boulders on the soil surface limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Careful planning is needed in forestry operations to minimize the hazard of erosion and maintain water quality.
• The hazard of erosion can be reduced by locating roads and trails on the contour, protecting permanent access roads through the use of gravel, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope may limit the practical use of conventional equipment.
• Logs can be cabled or winched to adjacent areas that have smoother slopes, and planting can be done by hand.
• The numerous boulders and stones on the soil surface severely limit the use of equipment.
• Operating wheeled equipment, building access

roads, harvesting timber, and the mechanized planting of seedlings are very difficult and expensive in most places.
• Seedling mortality rates may be high due to the numerous boulders and stones on and in the surface layer.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
• Boulders and stones on the soil surface and the slope are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: 7s

Po—Pope sandy loam, occasionally flooded

Setting

Landscape: Ridges and Valleys
Landform: Narrow flood plains
Landform position: Linear to slightly convex slopes
Shape of areas: Elongated
Size of areas: 5 to 15 acres
Slope range: 0 to 3 percent

Composition

Pope soil and similar soils: 90 to 95 percent
Dissimilar soils: 5 to 10 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Moderate
Depth to seasonal high water table: More than 60 inches
Flooding: Occasional
Reaction: Extremely acid to strongly acid
Depth to bedrock: More than 72 inches

Typical Profile

Surface layer:
0 to 4 inches—brown sandy loam

Subsoil:
4 to 24 inches—dark yellowish brown and yellowish brown sandy loam
24 to 32 inches—strong brown cobbly sandy loam

Underlying material:
32 to 60 inches—yellowish brown cobbly loamy sand

Minor Soils

Similar soils:
• Sequatchie soils on adjacent low stream terraces

Dissimilar soils:
• Intermingled areas of Steadman soils
• Intermingled areas of soils that have more rock fragments throughout than the Pope soil

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• There is a potential for crop damage from flooding.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
• There is a potential for hay crop damage from flooding.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
• Flooding is a severe limitation affecting urban uses. This limitation is difficult and expensive to overcome. A site that is not subject to flooding should be selected.

Interpretive Group

Land capability classification: 2w

Ro—Rosman sandy loam, occasionally flooded

Setting

Landscape: Blue Ridge
Landform: Flood plains
Landform position: Linear to slightly convex slopes
Shape of areas: Elongated or irregular
Size of areas: 5 to 30 acres
Slope range: 0 to 2 percent

Composition

Rosman soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate or high
Depth to seasonal high water table: 48 to more than 60 inches from December to April
Flooding: Occasional
Reaction: Strongly acid to slightly acid
Depth to bedrock: 60 inches or more

Typical Profile

Surface layer:
0 to 10 inches—dark brown sandy loam
10 to 19 inches—dark brown sandy loam

Subsoil:
19 to 49 inches—dark yellowish brown and brown sandy loam

Underlying material:
49 to 64 inches—dark yellowish brown loamy sand

Minor Soils

Similar soils:
- Intermingled soils that have lighter colored surface layers than the Rosman soil

Dissimilar soils:
- Moderately well drained soils in the slightly concave landform positions
- Soils that have sandy textures throughout, along riverbanks and streambanks
- Braddock soils on adjacent high stream terraces

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
- There is a potential for crop damage from flooding.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
- There is a potential for hay crop damage from flooding.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
- This soil has few limitations affecting forest management.
- Proper site preparation helps to reduce plant competition from undesirable species.
- See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
- Flooding is a severe limitation affecting urban uses. This limitation is difficult and expensive to overcome. A site that is not subject to flooding should be selected.

Interpretive Group

Land capability classification: 2w

Sb—Sequatchie loam, rarely flooded

Setting

Landscape: Ridges and Valleys
Landform: Low stream terraces
Landform position: Linear slopes
Shape of areas: Elongated or roughly rectangular
Size of areas: 5 to 30 acres
Slope range: 0 to 3 percent

Composition

Sequatchie soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high

Depth to seasonal high water table: More than 72 inches
Flooding: Rare
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 10 inches—dark brown loam

Subsurface layer:
10 to 17 inches—brown loam

Subsoil:
17 to 33 inches—strong brown clay loam
33 to 51 inches—strong brown loam

Underlying material:
51 to 62 inches—strong brown sandy loam

Minor Soils

Similar soils:
- Staser soils on adjacent flood plains

Dissimilar soils:
- Steadman soils on adjacent flood plains
- Sequatchie soils that are occasionally flooded

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
- There is a potential for crop damage from flooding.

Pasture and hayland

Suitability: Well suited
Management measures and considerations:
- There is a potential for hay crop damage from flooding.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
- This soil has few limitations affecting forest management.
- Proper site preparation helps to reduce plant competition from undesirable species.
- See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
- Flooding is a severe limitation affecting urban uses. This limitation is difficult and expensive to overcome. A site that is not subject to flooding should be selected.

Interpretive Group

Land capability classification: 1

ShB—Shelocta silt loam, 2 to 5 percent slopes

Setting

Landscape: Ridges and Valleys
Landform: Colluvial fans and coves
Landform position: Footslopes and toeslopes
Shape of areas: Roughly rectangular or irregular
Size of areas: 4 to 50 acres

Composition

Shelocta soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 48 inches

Typical Profile

Surface layer:
0 to 10 inches—brown silt loam

Subsoil:
10 to 17 inches—strong brown silty clay loam
17 to 48 inches—strong brown channery silty clay loam
48 to 60 inches—strong brown channery silt loam

Minor Soils

Similar soils:
- Intermingled areas of soils that have more clay in the subsoil than the Shelocta soil

Dissimilar soils:
- Steadman soils on adjacent flood plains
- Intermingled areas of soils that have more rock fragments throughout than the Shelocta soil

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability: Well suited
Management measures and considerations:
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Well suited
Management measures and considerations:
• Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.

Interpretive Group

Land capability classification: 2e

ShC—Shelocta silt loam, 5 to 15 percent slopes

Setting

Landscape: Ridges and Valleys
Landform: Colluvial fans and coves
Landform position: Footslopes and toeslopes
Shape of areas: Roughly rectangular or irregular
Size of areas: 4 to 50 acres

Composition

Shelocta soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 48 inches

Typical Profile

Surface layer:
0 to 10 inches—brown silt loam

Subsoil:
10 to 17 inches—strong brown silty clay loam
17 to 48 inches—strong brown channery silty clay loam
48 to 60 inches—strong brown channery silt loam

Minor Soils

Similar soils:
• Intermingled areas of soils that have more clay in the subsoil than the Shelocta soil

Dissimilar soils:
• Steadman soils on adjacent flood plains
• Intermingled areas of soils that have more rock fragments throughout than the Shelocta soil

Use and Management

Cropland

Suitability: Moderately suited
Management measures and considerations:
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited

Management measures and considerations:
• In the steeper areas, the slope may limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Moderately suited
Management measures and considerations:
• Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.
• Grading or shaping land prior to construction helps to minimize the damage from surface water and prevent erosion.

Interpretive Group

Land capability classification: 3e

SoD—Soco loam, 12 to 25 percent slopes

Setting

Landscape: Blue Ridge
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 5 to 70 acres

Composition

Soco soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: 20 to 40 inches

Typical Profile

Surface layer:
0 to 2 inches—very dark grayish brown loam

Subsoil:
2 to 29 inches—yellowish brown, brownish yellow, and strong brown loam

Underlying material:
29 to 34 inches—strong brown loam

Bedrock:
34 to 50 inches—soft metasandstone

Minor Soils

Similar soils:
• Intermingled areas of soils that have more rock fragments throughout than the Soco soil

Dissimilar soils:
• Intermingled areas of Cataska, Ditney, and Unicoi soils

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Susceptibility to erosion and the slope are the main limitations affecting cultivated crops.
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Moderately suited
Suitability for hayland: Poorly suited
Management measures and considerations:
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
• The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
• Seedling mortality rates may be affected by increased rates of surface water runoff and a lower moisture supply. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slope is the main limitation affecting urban uses.
• Designing structures and septic tank absorption fields so that they conform to the natural slope or building in the less sloping areas helps to improve soil performance.
• Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.

Interpretive Group

Land capability classification: 6e

SoE—Soco-Cataska complex, 25 to 80 percent slopes, eroded

Setting

Landscape: Blue Ridge
Landform: Ridges
Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 10 to several hundred acres

Composition

Soco soil: 50 to 70 percent
Cataska soil: 25 to 40 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Soco—well drained; Cataska—excessively drained
Permeability: Soco—moderately rapid; Cataska—moderately rapid or rapid
Available water capacity: Soco—moderate or high; Cataska—very low
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: Soco—20 to 40 inches; Cataska—10 to 20 inches

Typical Profile

Soco

Surface layer:
0 to 2 inches—very dark grayish brown loam

Subsoil:
2 to 29 inches—yellowish brown, brownish yellow, and strong brown loam

Underlying material:
29 to 34 inches—strong brown loam

Bedrock:
34 to 50 inches—soft metasandstone

Cataska

Surface layer:
0 to 2 inches—dark yellowish brown channery silt loam

Subsoil:
2 to 8 inches—yellowish brown very channery silt loam
8 to 12 inches—dark yellowish brown extremely channery silt loam

Bedrock:
12 to 40 inches—soft, fractured slate

Minor Soils

Dissimilar soils:
• Intermingled areas of Ditney, Junaluska, Sylco, and Unicoi soils

Use and Management

Cropland

Suitability: Unsuited

Management measures and considerations:
• Susceptibility to erosion, the restricted rooting zone, the very low available water capacity, and the slope are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability for pasture: Poorly suited
Suitability for hayland: Unsuited
Management measures and considerations:
• These soils are difficult to manage for pasture and hayland because of the slope and very low available water capacity.
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Careful planning is needed in forestry operations to minimize the hazard of erosion and maintain water quality.
• The hazard of erosion can be reduced by locating roads and trails on the contour, protecting permanent access roads through the use of gravel, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope may limit the practical use of conventional equipment.
• Logs can be cabled or winched to adjacent areas that have smoother slopes, and planting can be done by hand.
• Seedling mortality rates may be high due to the limited rooting depth and very low available water capacity. Available moisture may be further reduced on the warmer aspects. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
• The slope and depth to bedrock are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: 7s

St—Staser loam, occasionally flooded

Setting

Landscape: Ridges and Valleys
Landform: Flood plains
Landform position: Linear slopes
Shape of areas: Long and narrow or roughly rectangular
Size of areas: 5 to 30 acres
Slope range: 0 to 2 percent

Composition

Staser soil and similar soils: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: High
Depth to seasonal high water table: 36 to 48 inches from December to March
Flooding: Occasional
Reaction: Moderately acid to neutral
Depth to bedrock: 60 inches or more

Typical Profile

Surface layer:
0 to 11 inches—dark brown loam

Subsurface layer:
11 to 36 inches—very dark grayish brown and dark brown loam

Subsoil:
36 to 46 inches—brown loam
46 to 60 inches—dark yellowish brown fine sandy loam

Underlying material:
60 to 72 inches—dark yellowish brown fine sandy loam

Minor Soils

Similar soils:
• Combs soils on or near riverbanks
• Sequatchie soils on adjacent stream terraces

Dissimilar soils:
• Intermingled areas of Steadman soils

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• There is a potential for crop damage from flooding.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
• There is a potential for hay crop damage from flooding.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
• Flooding is a severe limitation affecting urban uses. This limitation is difficult and expensive to overcome. A site that is not subject to flooding should be selected.

Interpretive Group

Land capability classification: 2w

Su—Steadman silt loam, occasionally flooded

Setting

Landscape: Ridges and Valleys
Landform: Flood plains and drainageways
Landform position: Linear or slightly concave slopes
Shape of areas: Long and narrow or irregular
Size of areas: 5 to 100 acres
Slope range: 0 to 3 percent

Composition

Steadman soil and similar soils: 90 to 95 percent
Dissimilar soils: 5 to 10 percent

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: High
Depth to seasonal high water table: 24 to 36 inches from December to April
Flooding: Occasional
Reaction: Strongly acid to slightly alkaline
Depth to bedrock: 60 inches or more

Typical Profile

Surface layer:
0 to 9 inches—dark yellowish brown silt loam

Subsoil:
9 to 20 inches—yellowish brown silt loam
20 to 35 inches—yellowish brown silt loam that has light brownish gray masses of iron depletion and yellowish brown masses of iron concentration

Underlying material:
35 to 60 inches—yellowish brown silt loam that has light brownish gray masses of iron depletion and yellowish brown masses of iron concentration

Minor Soils

Similar soils:
• Intermingled soils that have less silt in the subsoil than the Steadman soil

Dissimilar soils:
• Intermingled areas of Pope soils
• Sequatchie soils on low stream terraces
• Dunning soils in depressions

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• There is a potential for crop damage from flooding.
• Wetness may delay planting or hinder harvesting operations.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
• There is a potential for hay crop damage from flooding.
• Livestock grazing when the soil is wet can result in soil compaction and loss of productivity.

• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
• Flooding and wetness are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome. A site that is not subject to flooding should be selected.

Interpretive Group

Land capability classification: 2w

TaD2—Talbott-Rock outcrop complex, 10 to 25 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes (fig. 3)
Shape of areas: Roughly rectangular or irregular
Size of areas: 5 to 80 acres

Composition

Talbott soil: 55 to 75 percent
Rock outcrop: 20 to 35 percent
Dissimilar soils: 5 to 10 percent

Properties and Qualities of the Talbott Soil

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Low or moderate
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Strongly acid to slightly acid
Depth to bedrock: 20 to 40 inches

Typical Profile

Talbott

Surface layer:
0 to 6 inches—brown silty clay loam

Subsoil:
6 to 32 inches—yellowish red clay

Bedrock:
32 inches—hard limestone

Rock outcrop

Rock outcrop consists of intermingled areas of exposed limestone and areas that have less than 2 or 3 inches of soil over limestone bedrock. It is scattered throughout the map unit. Most outcrops protrude from a few inches to about 24 inches above the surface. Rock outcrop supports little or no vegetation.

Minor Soils

Dissimilar soils:
• Intermingled areas of soils that have hard bedrock at a depth of more than 40 inches
• Intermingled areas of Dewey and Decatur soils
• Random areas of soils that have hard bedrock at a depth of less than 20 inches

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Susceptibility to erosion, the slope, the restricted rooting zone, and the presence of rock outcrops are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability for pasture: Moderately suited
Suitability for hayland: Poorly suited
Management measures and considerations:
• The slope and areas of rock outcrop limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
• The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize

Figure 3.—An area of Talbott-Rock outcrop complex, 10 to 25 percent slopes, eroded. The extensive areas of rock outcrop are a severe limitation affecting management practices that require the frequent use of equipment.

disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.

- Damage to tree roots from soil compaction and rutting can occur when the soil is wet. Forestry operations should be planned for drier times of the year.
- The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
- Seedling mortality rates may be affected by the surface texture, increased rates of surface water runoff, and a lower moisture supply. Reinforcement plantings can be made until a desired stand is attained.
- Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
- Proper site preparation helps to reduce plant competition from undesirable species.

• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
• The slope, areas of rock outcrop, and depth to bedrock are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: Talbott—6e; Rock outcrop—8s

TaE2—Talbott-Rock outcrop complex, 25 to 60 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Side slopes
Shape of areas: Roughly rectangular or irregular
Size of areas: 5 to 80 acres

Composition

Talbott soil: 55 to 75 percent
Rock outcrop: 20 to 35 percent
Dissimilar soils: 5 to 10 percent

Properties and Qualities of the Talbott Soil

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Low or moderate
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Strongly acid to slightly acid
Depth to bedrock: 20 to 40 inches

Typical Profile

Talbott

Surface layer:
0 to 6 inches—brown silty clay loam

Subsoil:
6 to 32 inches—yellowish red clay

Bedrock:
32 inches—hard limestone

Rock outcrop

Rock outcrop consists of intermingled areas of exposed limestone and areas that have less than 2 or 3 inches of soil over limestone bedrock. It is scattered throughout the map unit. Most outcrops protrude from a few inches to about 12 inches above the surface. Rock outcrop supports little or no vegetation.

Minor Soils

Dissimilar soils:
• Intermingled areas of soils that have hard bedrock at a depth of more than 40 inches
• Intermingled areas of Dewey and Decatur soils
• Random areas of soils that have hard bedrock at a depth of less than 20 inches

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Susceptibility to erosion, the slope, the restricted rooting zone, and the presence of rock outcrops are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability for pasture: Poorly suited
Suitability for hayland: Unsuited
Management measures and considerations:
• The slope and areas of rock outcrop may increase the difficulty of pasture establishment and maintenance.
• The slope and areas of rock outcrop limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Careful planning is needed in forestry operations to minimize the hazard of erosion and maintain water quality.
• The hazard of erosion can be reduced by locating roads and trails on the contour, protecting permanent access roads through the use of gravel, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• Damage to tree roots from soil compaction and rutting can occur when the soil is wet. Forestry

operations should be planned for drier times of the year.
• The slope may limit the practical use of conventional equipment.
• Logs can be cabled or winched to adjacent areas that have smoother slopes, and planting can be done by hand.
• Seedling mortality rates may be affected by the surface texture, increased rates of surface water runoff, and a lower moisture supply. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
• The slope, areas of rock outcrop, and depth to bedrock are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: Talbott—7e; Rock outcrop—8s

ToB2—Townley silt loam, 2 to 5 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits
Shape of areas: Irregular
Size of areas: 5 to 20 acres

Composition

Townley soil: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Slow
Available water capacity: Low or moderate
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: 20 to 40 inches

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 30 inches—strong brown and yellowish red clay

Bedrock:
30 to 50 inches—soft, fractured shale

Minor Soils

Dissimilar soils:
• Intermingled areas of Nonaburg and Montevallo soils

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability: Well suited
Management measures and considerations:
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• Because of the slow permeability and depth to

bedrock, the careful planning and design of septic tank absorption fields may be required.
• The difficulty in excavating for dwellings with basements is increased by the depth to bedrock.
• Reinforcing foundations, footings, and basements helps to prevent damage caused by shrinking and swelling.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.

Interpretive Group

Land capability classification: 2e

ToC2—Townley silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 5 to 20 acres

Composition

Townley soil: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Slow
Available water capacity: Low or moderate
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: 20 to 40 inches

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 30 inches—strong brown and yellowish red clay

Bedrock:
30 to 50 inches—soft, fractured shale

Minor Soils

Dissimilar soils:
• Intermingled areas of Nonaburg and Montevallo soils

Use and Management

Cropland

Suitability: Moderately suited
Management measures and considerations:
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
• In the steeper areas, the slope may limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• Because of the slow permeability and depth to bedrock, the careful planning and design of septic tank absorption fields is required.
• The difficulty in excavating for dwellings with basements is increased by the depth to bedrock.
• Reinforcing foundations, footings, and basements helps to prevent damage caused by shrinking and swelling.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.
• Grading or shaping land prior to construction helps

to minimize the damage from surface water and prevent erosion.

Interpretive Group

Land capability classification: 3e

ToD2—Townley silt loam, 12 to 25 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

Townley soil: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Slow
Available water capacity: Low or moderate
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: 20 to 40 inches

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 30 inches—strong brown and yellowish red clay

Bedrock:
30 to 50 inches—soft, fractured shale

Minor Soils

Dissimilar soils:
• Intermingled areas of Nonaburg and Montevallo soils

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Susceptibility to erosion and the slope are the main limitations affecting cultivated crops.
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Moderately suited
Suitability for hayland: Poorly suited
Management measures and considerations:
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
• The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
• Seedling mortality rates may be affected by increased rates of surface water runoff and a lower moisture supply. Available moisture may be further reduced on the warmer aspects. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slope is the main limitation affecting urban uses.
• Designing structures and septic tank absorption fields so that they conform to the natural slope or

building in the less sloping areas helps to improve soil performance.
• Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.
• The difficulty in excavating for dwellings with basements is increased by the depth to bedrock.
• Reinforcing foundations, footings, and basements helps to prevent damage caused by shrinking and swelling.

Interpretive Group

Land capability classification: 4e

ToE2—Townley silt loam, 25 to 60 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Side slopes
Shape of areas: Irregular
Size of areas: 5 to 50 acres

Composition

Townley soil: 85 to 95 percent
Dissimilar soils: 5 to 15 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Slow
Available water capacity: Low or moderate
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: 20 to 40 inches

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 30 inches—strong brown and yellowish red clay

Bedrock:
30 to 50 inches—soft, fractured shale

Minor Soils

Dissimilar soils:
• Intermingled areas of Nonaburg and Montevallo soils
• Widely scattered areas of shale rock outcrop

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Susceptibility to erosion and the slope are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability for pasture: Poorly suited
Suitability for hayland: Unsuited
Management measures and considerations:
• The slope may increase the difficulty of pasture establishment and maintenance.
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Careful planning is needed in forestry operations to minimize the hazard of erosion and maintain water quality.
• The hazard of erosion can be reduced by locating roads and trails on the contour, protecting permanent access roads through the use of gravel, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope may limit the practical use of conventional equipment.
• Logs can be cabled or winched to adjacent areas that have smoother slopes, and planting can be done by hand.
• Seedling mortality rates may be affected by increased rates of surface water runoff and a lower moisture supply. Available moisture may be further reduced on the warmer aspects. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• Proper site preparation helps to reduce plant competition from undesirable species.

• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
• The slope is a severe limitation affecting urban uses. This limitation is difficult and expensive to overcome.

Interpretive Group

Land capability classification: 7e

UdE—Unicoi-Ditney-Rock outcrop complex, 30 to 80 percent slopes

Setting

Landscape: Blue Ridge
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Roughly rectangular or irregular
Size of areas: 10 to several hundred acres

Composition

Unicoi soil and similar soils: 40 to 60 percent
Ditney soil and similar soils: 25 to 40 percent
Rock outcrop: 15 to 30 percent
Dissimilar soils: 5 to 15 percent

Properties and Qualities of the Unicoi and Ditney Soils

Drainage class: Unicoi—excessively drained; Ditney—well drained
Permeability: Moderately rapid
Available water capacity: Unicoi—very low; Ditney—low or moderate
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: Unicoi—7 to 20 inches; Ditney—20 to 40 inches

Typical Profile

Unicoi

Surface layer:
0 to 2 inches—very dark grayish brown gravelly sandy loam

Subsoil:
2 to 12 inches—yellowish brown very gravelly sandy loam

Bedrock:
12 inches—hard, fractured metasandstone

Ditney

Surface layer:
0 to 4 inches—brown sandy loam

Subsurface layer:
4 to 9 inches—yellowish brown sandy loam

Subsoil:
9 to 29 inches—yellowish brown and strong brown sandy loam

Underlying material:
29 to 36 inches—strong brown sandy loam

Bedrock:
36 inches—hard metasandstone

Rock outcrop

Rock outcrop consists of intermingled areas of exposed sandstone or quartzite and areas that have less than 2 or 3 inches of soil over bedrock. It is scattered throughout the map unit. Most outcrops protrude from a few inches to about 24 inches above the surface. Rock outcrop supports little or no vegetation.

Minor Soils

Similar soils:
• Intermingled areas of soils that have fewer rock fragments throughout than the Unicoi and Ditney soils
• Intermingled areas of soils that have bedrock at depths of 20 to 40 inches and that have more rock fragments throughout than the Unicoi and Ditney soils

Dissimilar soils:
• Intermingled areas of soils that have hard bedrock at a depth of more than 40 inches
• Intermingled areas of Soco soils

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Susceptibility to erosion, the slope, the restricted rooting zone, and the presence of rock outcrops are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability for pasture: Poorly suited
Suitability for hayland: Unsuited
Management measures and considerations:
• This map unit is difficult to manage for pasture and

hayland because of the slope, areas of rock outcrop, shallow rooting depth, and very low or low available water capacity.
• The slope and areas of rock outcrop limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Careful planning is needed in forestry operations to minimize the hazard of erosion and maintain water quality.
• The hazard of erosion can be reduced by locating roads and trails on the contour, protecting permanent access roads through the use of gravel, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope may limit the practical use of conventional equipment.
• Logs can be cabled or winched to adjacent areas that have smoother slopes, and planting can be done by hand.
• Seedling mortality rates may be high due to the limited rooting depth and very low or low available water capacity. Available moisture may be further reduced on the warmer aspects. Reinforcement plantings can be made until a desired stand is attained.
• Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
• The slope and depth to bedrock are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: Unicoi and Ditney—7s; Rock outcrop—8s

UnE—Unicoi-Rock outcrop complex, 30 to 80 percent slopes

Setting

Landscape: Blue Ridge
Landform: Ridges
Landform position: Summits and side slopes
Shape of areas: Roughly rectangular or irregular
Size of areas: 10 to several hundred acres

Composition

Unicoi soil and similar soils: 50 to 70 percent
Rock outcrop: 25 to 45 percent
Dissimilar soils: 5 to 15 percent

Properties and Qualities of the Unicoi Soil

Drainage class: Excessively drained
Permeability: Moderately rapid
Available water capacity: Very low
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Extremely acid to strongly acid
Depth to bedrock: 7 to 20 inches

Typical Profile

Unicoi

Surface layer:
0 to 2 inches—very dark grayish brown gravelly sandy loam

Subsoil:
2 to 12 inches—yellowish brown very gravelly sandy loam

Bedrock:
12 inches—hard, fractured metasandstone

Rock outcrop

Rock outcrop consists of intermingled areas of exposed sandstone or quartzite and areas that have less than 2 or 3 inches of soil over bedrock. It is scattered throughout the map unit and also occurs as vertical bluffs ranging from 10 to about 300 feet in height on Bluff Mountain and English Mountain. Most outcrops protrude from a few inches to about 24 inches above the surface. Rock outcrop supports little or no vegetation.

Minor Soils

Similar soils:
• Intermingled areas of soils that have fewer rock fragments throughout than the Unicoi soil

Dissimilar soils:
- Intermingled areas of soils that have hard bedrock at a depth of more than 40 inches
- Intermingled areas of Ditney and Soco soils

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
- Susceptibility to erosion, the slope, the restricted rooting zone, and the areas of rock outcrop are the main limitations affecting cultivated crops.

Pasture and hayland

Suitability for pasture: Poorly suited
Suitability for hayland: Unsuited
Management measures and considerations:
- This map unit is difficult to manage for pasture and hayland because of the slope, areas of rock outcrop, shallow rooting depth, and very low available water capacity.
- The slope and areas of rock outcrop limit the use of equipment for harvesting hay crops.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Poorly suited
Management measures and considerations:
- Careful planning is needed in forestry operations to minimize the hazard of erosion and maintain water quality.
- The hazard of erosion can be reduced by locating roads and trails on the contour, protecting permanent access roads through the use of gravel, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
- The slope may limit the practical use of conventional equipment.
- Logs can be cabled or winched to adjacent areas that have smoother slopes, and planting can be done by hand.
- Seedling mortality rates may be high due to the limited rooting depth and very low available water capacity. Available moisture may be further reduced on the warmer aspects. Reinforcement plantings can be made until a desired stand is attained.
- Windthrow is a hazard in some areas because of the limited rooting depth. This hazard may be reduced by applying a carefully regulated thinning program.
- See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
- The slope, areas of rock outcrop, and depth to bedrock are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome.

Interpretive Group

Land capability classification: Unicoi—7s; Rock outcrop—8s

Ur—Urban land

Setting

Urban land consists of areas where the surface is covered by asphalt, concrete, buildings, and other impervious surfaces. Parking lots, shopping centers, office buildings, and industrial areas are included in most areas. Most of this map unit is located on smooth, broad stream terraces that range from about 10 to 30 feet above the present stream level. The largest areas are along the West and Middle Prongs of the Little Pigeon River, within or near the city limits of Gatlinburg, Pigeon Forge, and Sevierville. Stream channels and drainage patterns have been altered in some areas in order to control flooding. Most areas are roughly oval or rectangular in shape and range from about 5 to 50 acres in size. Slopes range from 0 to 3 percent.

Composition

Urban land: 75 to 85 percent
Dissimilar soils: 10 to 15 percent

Properties and Qualities

Examination and identification of properties and qualities of Urban land is impractical.

Minor Soils

Dissimilar soils:
- Small areas of Steadman, Sequatchie, and Staser soils in most delineations and areas of Lostcove soils in the Gatlinburg area
- Small areas immediately adjacent to streams that are flooded
- Areas of soils that have been covered with loamy or extremely channery fill material

• Areas of soils that have been disturbed during development
• Areas where fill material has been borrowed or landshaping has removed 20 to 60 inches or more of the soil and underlying material

Use and Management

Most areas of this map unit are used for urban development. Areas of included soils and fill material may be suited for uses other than urban uses. The small size and location of these areas may be a limitation for some uses. Intensive onsite investigations are needed to determine the potential and limitations for any proposed use.

Interpretive Group

Land capability classification: None assigned

W—Water

This map unit consists of bodies of water, such as lakes and ponds, and occurs throughout the survey area. It also includes areas of perennial streams that are wide enough to be shown within double lines on the detailed soil maps.

No land capability classification is assigned.

WaB2—Waynesboro loam, 2 to 5 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: High stream terraces
Landform position: Summits
Shape of areas: Oval or irregular
Size of areas: 5 to 30 acres

Composition

Waynesboro soil and similar soils: 90 to 95 percent
Dissimilar soils: 5 to 10 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 9 inches—brown loam

Subsoil:
9 to 20 inches—red clay
20 to 72 inches—dark red clay

Minor Soils

Similar soils:
• Intermingled areas of Decatur, Dewey, and Holston soils
• Intermingled areas of Waynesboro soils that have a gravelly or cobbly surface layer

Dissimilar soils:
• Intermingled areas of soils that have bedrock at a depth of less than 60 inches

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability: Well suited
Management measures and considerations:
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Well suited
Management measures and considerations:
• Because of the restricted soil permeability, the

careful planning and design of septic tank absorption fields may be required.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.

Interpretive Group

Land capability classification: 2e

WaC2—Waynesboro loam, 5 to 12 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: High stream terraces
Landform position: Summits and side slopes
Shape of areas: Oval or irregular
Size of areas: 5 to 40 acres

Composition

Waynesboro soil and similar soils: 90 to 95 percent
Dissimilar soils: 5 to 10 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 9 inches—brown loam

Subsoil:
9 to 20 inches—red clay
20 to 72 inches—dark red clay

Minor Soils

Similar soils:
• Intermingled areas of Decatur, Dewey, and Holston soils
• Intermingled areas of Waynesboro soils that have a gravelly or cobbly surface layer

Dissimilar soils:
• Intermingled areas of soils that have bedrock at a depth of less than 60 inches

Use and Management

Cropland

Suitability: Moderately suited
Management measures and considerations:
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Well suited (fig. 4)
Suitability for hayland: Moderately suited
Management measures and considerations:
• In the steeper areas, the slope may limit the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forest management.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Moderately suited
Management measures and considerations:
• Because of the restricted soil permeability, the careful planning and design of septic tank absorption fields may be required.
• Providing suitable subgrade or base material for local roads and streets helps to overcome the low soil strength.
• Grading or shaping land prior to construction helps to minimize the damage from surface water and prevent erosion.

Interpretive Group

Land capability classification: 3e

Figure 4.—An area of Waynesboro loam, 5 to 12 percent slopes, eroded. This soil is well suited to pasture.

WaD2—Waynesboro loam, 12 to 25 percent slopes, eroded

Setting

Landscape: Ridges and Valleys
Landform: High stream terraces
Landform position: Side slopes
Shape of areas: Roughly oval or irregular
Size of areas: 5 to 20 acres

Composition

Waynesboro soil and similar soils: 80 to 90 percent
Dissimilar soils: 10 to 20 percent

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 72 inches
Flooding: None
Reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Typical Profile

Surface layer:
0 to 9 inches—brown loam

Subsoil:
9 to 20 inches—red clay
20 to 72 inches—dark red clay

Minor Soils

Similar soils:
- Intermingled areas of Decatur, Dewey, and Holston soils
- Intermingled areas of Waynesboro soils that have a gravelly or cobbly surface layer

Dissimilar soils:
• Intermingled areas of soils that have bedrock at a depth of less than 60 inches

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Susceptibility to erosion and the slope are the main limitations affecting cultivated crops.
• The potential for erosion is greater when conventional tillage is used.
• Conservation tillage, crop residue management, contour farming, and the use of cover crops help to control erosion, increase infiltration, and maintain soil tilth.
• Surface water runoff can be controlled by terraces, grassed waterways, field borders, and filter strips.

Pasture and hayland

Suitability for pasture: Moderately suited
Suitability for hayland: Poorly suited
Management measures and considerations:
• The slope limits the use of equipment for harvesting hay crops.
• Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
• Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Moderately suited
Management measures and considerations:
• The hazard of erosion can be reduced by locating roads and trails on the contour, installing water breaks and culverts, using logging methods that minimize disturbance to the surface layer, and reestablishing vegetation on roads and landings that are no longer used.
• The slope generally limits only the use of large specialized equipment. Slopes are typically short enough that the use of conventional equipment is possible.
• Seedling mortality rates may be affected by increased rates of surface water runoff and a lower moisture supply. Reinforcement plantings can be made until a desired stand is attained.
• Proper site preparation helps to reduce plant competition from undesirable species.
• See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Poorly suited
Management measures and considerations:
• The slope is the main limitation affecting urban uses.
• Designing structures and septic tank absorption fields so that they conform to the natural slope or building in the less sloping areas helps to improve soil performance.
• Constructing roads on the contour and providing adequate water-control structures, such as culverts, help to maintain road stability.

Interpretive Group

Land capability classification: 4e

Wf—Whitesburg silt loam, occasionally flooded

Setting

Landscape: Ridges and Valleys
Landform: Drainageways
Landform position: Linear slopes
Shape of areas: Long and narrow
Size of areas: 5 to 20 acres
Slope range: 1 to 5 percent

Composition

Whitesburg soil and similar soils: 90 to 95 percent
Dissimilar soils: 5 to 10 percent

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: High
Depth to seasonal high water table: 24 to 48 inches from December to March
Flooding: Occasional
Reaction: Slightly acid to slightly alkaline
Depth to bedrock: 40 to 60 inches

Typical Profile

Surface layer:
0 to 4 inches—brown silt loam

Subsoil:
4 to 18 inches—yellowish brown silt loam
18 to 25 inches—yellowish brown silty clay loam that has pale brown and strong brown masses of iron concentration

Underlying material:
25 to 53 inches—yellowish brown silty clay loam that

has light brownish gray masses of iron depletion and yellowish brown masses of iron concentration

Bedrock:
53 to 60 inches—soft calcareous shale

Minor Soils

Similar soils:
- Intermingled areas of Steadman soils

Dissimilar soils:
- Nonaburg soils on adjacent uplands
- Dunning soils in depressional areas

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
- There is a potential for crop damage from flooding.
- Wetness may delay planting or hinder harvesting operations.

Pasture and hayland

Suitability for pasture: Well suited
Suitability for hayland: Moderately suited
Management measures and considerations:
- There is a potential for hay crop damage from flooding.
- Livestock grazing when the soil is wet can result in soil compaction and loss of productivity.
- Proper stocking rates, pasture rotation, deferred grazing, and a well planned clipping and harvesting schedule are important management practices.
- Applying lime and fertilizer according to soil test recommendations helps to increase the availability of nutrients and maximize productivity.

Woodland

Suitability: Well suited
Management measures and considerations:
- This soil has few limitations affecting forest management.
- Proper site preparation helps to reduce plant competition from undesirable species.
- See table 7 for specific information concerning potential productivity and suggested trees to plant.

Urban development

Suitability: Unsuited
Management measures and considerations:
- Flooding and wetness are severe limitations affecting urban uses. These limitations are difficult and expensive to overcome. A site that is not subject to flooding should be selected.

Interpretive Group

Land capability classification: 2w

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed for each soil, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

According to the 1987 Census of Agriculture, 78,192 acres in the survey area were used for crops and pasture. Of this total, 14,644 acres were used only for pasture or grazing and 88 acres were irrigated land.

Farming is competing with other land uses in the survey area. The acreage in crops and pasture is decreasing as more land is used for urban development. The 1987 Census shows a 12 percent decrease in harvested cropland and a 10 percent decrease in total cropland, including grazing land and other cropland for the same period. In 1982, the county had 1,176 farms and the average size of a farm was 80 acres. In 1987, the county had 953 farms and the average size of a farm was 82 acres. During this 5-year period, the number of farms decreased by 223, but the average farm size remained approximately the same. Much of the acreage being developed was well suited to crops and pastures. In general, the soils in the survey area that are well suited to crops and pasture are also well suited to urban development, with the exception of areas subject to flooding. Data on specific soils in the soil survey can be used in determining future land use priorities. Potential productive capacity of the soil for agricultural products should be weighed against the limitations and potential for non-farm development.

Protecting the soils used for cultivated crops from damaging erosion is not difficult. Most of this cropland is on nearly level or gently sloping bottom lands and stream terraces.

On livestock farms, which require pasture and hay, including legumes and grasses in the cropping system reduces the hazard of erosion on sloping land,

provides nitrogen, and improves tilth for the following crops.

In areas of Dewey, Decatur, and Fullerton soils, most slopes are so short that terracing is not practical. On these soils, a cropping system that provides a substantial plant cover is required for erosion control unless minimum tillage is practiced. Minimizing tillage and leaving crop residue on the surface conserve moisture and reduce the hazards of runoff and erosion.

Diversions reduce the length of slope, thus minimizing runoff and erosion. They are effective on sites having steep or long slopes above soils on toeslopes.

Contouring and contour stripcropping are effective erosion-control practices in the survey area. They are best adapted to soils that have fairly smooth, uniform slopes, including many areas of Dewey, Decatur, and Etowah soils.

Information on the design of erosion-control practices for each kind of soil is contained in the "Field Office Technical Guide," which is available at the office of the Natural Resources Conservation Service.

Soil drainage is not a management concern on most of the acreage used for crops and pasture in the survey area. There are about 400 acres of poorly drained Dunning soils and 1,800 acres of poorly drained Dunning soils, overwash, in the survey area. About half of these soils are in native forest. Artificial drainage has been used on some of these soils and is needed if they are used for crops and pasture. A combination of surface drainage and tile drainage is needed on these soils if they are intensively row cropped. Finding adequate outlets for tile drainage is difficult in many areas of these soils.

Most soils on uplands are naturally very strongly acid or strongly acid. Unless previously limed, these soils require applications of ground limestone in order to raise the pH level sufficiently for good growth of crops that grow best on slightly acid or neutral soils. Available phosphorous and potash levels are naturally low in most of these soils.

The soils on flood plains, such as Steadman and Whitesburg soils, are moderately acid to mildly alkaline and are naturally higher in plant nutrients than the soils on uplands.

On all soils, additions of lime and fertilizer should be based on soil tests, on the needs of the crop, and on the expected level of yields. The soil testing laboratory of the Cooperative Extension Service can help in determining the kinds and amounts of fertilizer and lime to be applied.

Specialty crops, including vegetables, fruits, and greenhouse and nursery plants, are now grown commercially on a small acreage in the survey area. Because there is a large vegetable canning and warehouse operation in the county, the potential is good for expanding the acreage for the production of adapted vegetables and fruits.

The latest information and suggestions on growing specialty crops can be obtained from the local office of the Cooperative Extension Service or the Natural Resources Conservation Service.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of each map unit also is shown in the table. Absence of a yield indicates that the crop is not suited or is not commonly grown in that soil map unit.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops.

Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland and for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by numerals 1 through 8. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have few limitations that restrict their use.

Class 2 soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class 5 soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation.

Class 7 soils have very severe limitations that make them unsuitable for cultivation.

Class 8 soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w,* or *s,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); and *s* shows that the soil is limited mainly because it is shallow, droughty, or stony.

In class 1 there are no subclasses because the soils of this class have few limitations.

The capability classification of the map units in this survey area is given in the section “Detailed Soil Map Units” and in the yields table.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. The slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

About 38,800 acres in the survey area, or nearly 15 percent of the total acreage, meets the soil requirements for prime farmland. Scattered areas of this land are throughout the county, but most are in the northern part, mainly in general soil map units 1, 2, 4, 5, and 9, which are described under the heading “General Soil Map Units.” About 15,000 acres of this prime farmland is used for crops. The crops grown on this land, mainly corn and soybeans, account for an estimated two-thirds of the county’s total agricultural income each year.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal

lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 6. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

Woodland Management and Productivity

Joseph H. Paugh, Forester, Natural Resources Conservation Service, helped prepare this section.

Woodland makes up 127,500 acres, or about 51 percent, of the total acreage of Sevier County. Most of this woodland is privately owned.

Oak-hickory, which covers 61,400 acres, is the most common forest type and grows on the upland soils. The loblolly-shortleaf pine type, which covers 14,200 acres, grows throughout the county and is often planted in eroded areas. The oak-pine type is on the remaining 51,900 acres and typically occurs on dry ridges and steep, south- and west-facing slopes.

Sevier County is in an area of Tennessee where average woodland growth is 36 cubic feet per acre per year. The greatest growth potential is normally on the lower third of the north- and east- facing slopes, where growth may reach 120 cubic feet per acre per year. Besides economic value, woodland values include wildlife habitat, recreation, natural beauty, and watershed protection.

Table 7 can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. In the table, *slight, moderate,* and *severe* indicate the degree of the major soil limitations to be considered in management.

Erosion hazard is the probability that damage will occur as a result of site preparation and cutting where the soil is exposed along roads, skid trails, and fire lanes and in log-handling areas. Forests that have been burned or overgrazed are also subject to erosion. Ratings of the erosion hazard are based on the percent of the slope. A rating of *slight* indicates that no particular prevention measures are needed under ordinary conditions. A rating of *moderate* indicates that erosion-control measures are needed in certain silvicultural activities. A rating of *severe* indicates that special precautions are needed to control erosion in most silvicultural activities.

Equipment limitation reflects the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. The chief characteristics and conditions considered in the ratings are slope, stones on the surface, rock outcrops, soil wetness, and texture of the surface layer. A rating of *slight* indicates that under normal conditions the kind of equipment and season of use are not significantly restricted by soil factors. Soil wetness can restrict equipment use, but the wet period does not exceed 1 month. A rating of *moderate* indicates that equipment use is moderately restricted because of one or more soil factors. If the soil is wet, the wetness restricts equipment use for a period of 1 to 3 months. A rating of *severe* indicates that equipment use is severely restricted either as to the kind of equipment that can be used or the season of use. If the soil is wet, the wetness restricts equipment use for more than 3 months.

Seedling mortality refers to the death of naturally occurring or planted tree seedlings, as influenced by the kinds of soil, soil wetness, or topographic conditions. The factors used in rating the soils for seedling mortality are texture of the surface layer, depth to a seasonal high water table and the length of the period when the water table is high, rock fragments in the surface layer, effective rooting depth, and slope aspect. A rating of *slight* indicates that seedling mortality is not likely to be a problem under normal conditions. Expected mortality is less than 25 percent. A rating of *moderate* indicates that some problems from seedling mortality can be expected. Extra precautions are advisable. Expected mortality is 25 to 50 percent. A rating of *severe* indicates that seedling mortality is a serious problem. Extra precautions are important. Replanting may be necessary. Expected mortality is more than 50 percent.

Windthrow hazard is the likelihood that trees will be uprooted by the wind because the soil is not deep enough for adequate root anchorage. The main restrictions that affect rooting are a seasonal high water table and the depth to bedrock, a fragipan, or other limiting layers. A rating of *slight* indicates that under normal conditions no trees are blown down by the wind. Strong winds may damage trees, but they do not uproot them. A rating of *moderate* indicates that some trees can be blown down during periods when

the soil is wet and winds are moderate or strong. A rating of *severe* indicates that many trees can be blown down during these periods.

Plant competition ratings indicate the degree to which undesirable species are expected to invade and grow when openings are made in the tree canopy. The main factors that affect plant competition are depth to the water table and the available water capacity. A rating of *slight* indicates that competition from undesirable plants is not likely to prevent natural regeneration or suppress the more desirable species. Planted seedlings can become established without undue competition. A rating of *moderate* indicates that competition may delay the establishment of desirable species. Competition may hamper stand development, but it will not prevent the eventual development of fully stocked stands. A rating of *severe* indicates that competition can be expected to prevent regeneration unless precautionary measures are applied.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index* and as a *volume* number. The site index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important trees. This number, expressed as cubic feet per acre per year, indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

The first species listed under *common trees* for a soil is the indicator species for that soil.

Suggested trees to plant are those that are suitable for commercial wood production.

Recreation

Joseph H. Paugh, Forester, Natural Resources Conservation Service, helped prepare this section.

Sevier County has potential for a wide variety of recreational activities. It has high potential for water sports areas, vacation cabins, vacation farms, riding stables, campgrounds, picnicking and field sports areas, golf courses, warm-water fishing, small game hunting, and natural, scenic, and historic areas. It has medium potential for cold-water fishing, shooting preserves, and big game and waterfowl hunting.

The soils in Sevier County generally are fairly suitable for recreational activities. Attention should be given to soil depth, permeability, texture, slope, surface stones, and drainage in developing recreation enterprises. Most problems associated with soil characteristics can be overcome by careful site selection and planning.

The soils of the survey area are rated in table 8 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In the table, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these measures.

The information in the table can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 11 and interpretations for dwellings without basements and for local roads and streets in table 10.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking and horseback riding should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

Gerald Montgomery, Biologist, Natural Resources Conservation Service, helped prepare this section.

Sevier County has a diverse population of wildlife and fish. The abundance and distribution of any particular species depend on the main use, amount of water, and kind of vegetation in a given area. Species that prefer the open land of cropland, pasture, brushy fencerows, thickets, and scattered woodlots include cottontail rabbit, bobwhite quail, mourning dove, meadowlark, eastern bluebird, groundhog, and cardinal. These species are most abundant where there is a diversity of vegetative conditions. Species that prefer the forested conditions of woodlots and timber tracts include whitetail deer, grey squirrel, raccoon, and a variety of non-game birds. Shallow lakes and other wetlands provide breeding habitat for wood ducks and resting and feeding areas for other migratory waterfowl. These wetlands are important to furbearers, such as mink and muskrat, and to aquatic non-game birds. Most areas in the county could be improved for use as wildlife habitat if the availability of food, water, and cover that wildlife need was increased.

The streams, lakes, and ponds of Sevier County support crappie, bream, smallmouth bass, trout, and catfish. Non-game species, such as carp, buffalo, and drum, are also abundant, especially in lakes.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting the appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 9, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of grain and seed crops are corn, wheat, oats, soybeans, and barley.

Grasses and legumes are domestic perennial

grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, lovegrass, orchardgrass, clover, annual lespedeza, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are crabgrass, goldenrod, beggarweed, and partridge pea.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, ash, sweetgum, dogwood, hickory, blackberry, and walnut. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are shrub lespedeza, autumn-olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, lake shorelines, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both and associated grasses, legumes, and wild herbaceous plants.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Table 10 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, and shrinking and swelling can cause the movement of footings. A high water table, depth to bedrock, large stones, slope, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock, and the available water capacity in the upper 40 inches affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 11 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features

are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

The table also shows the suitability of the soils for use as daily cover for landfill. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

The table gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock, flooding, and large stones.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. Slope and bedrock can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. Ease of excavation and revegetation should be considered.

The ratings in the table are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, and soil reaction affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to wind erosion.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 12 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet and have a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In the table, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, and bedrock.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel or stones, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel or stones, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the

absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 13 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; and susceptibility to flooding. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock. The performance of a system is affected by the depth of the root zone and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. A low available water capacity, restricted rooting depth, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 14 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under the heading “Soil Series and Their Morphology.”

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as about 15 percent, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 15 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factors are shown in table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the

more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Water Features

Table 16 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 16 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 16 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay

deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 17 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(4)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 18 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Eleven soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Ultisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udult (*Ud*, meaning humid, plus *ult*, from Ultisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludults (*Hapl*, meaning minimal horizonation, plus *udults*, the suborder of the Ultisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludults.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, mesic Typic Hapludults.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” *(6)*. Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” *(4)* and in “Keys to Soil Taxonomy” *(5)*. Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section “Detailed Soil Map Units.”

Braddock Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Alluvium and colluvium
Landscape: Blue Ridge
Landform: High stream terraces and colluvial fans
Landform position: Summits, side slopes, and footslopes

Slope range: 2 to 25 percent
Taxonomic class: Clayey, kaolinitic, mesic Typic Hapludults

Typical Pedon

Braddock loam, 5 to 12 percent slopes, eroded (fig. 5); about 4.7 miles south of the intersection of U.S. Highway 441 and State Route 66 on U.S. Highway 441, about 8.1 miles southwest on U.S. Highway 321, about 0.6 mile southeast on Roberson Road, 0.4 mile northeast on Valley Home Road, 0.05 mile northwest to a site in a road bank; USGS Wear Cove Topographic Quadrangle; lat. 35 degrees 43 minutes 16 seconds N. and long. 83 degrees 37 minutes 36 seconds W.

Ap—0 to 5 inches; dark yellowish brown (10YR 4/4) loam; moderate medium granular structure; friable; many fine roots; common fine continuous tubular pores; 10 percent rounded phyllite and quartzite gravel, by volume; moderately acid; clear wavy boundary.
BA—5 to 11 inches; strong brown (7.5YR 5/6) gravelly clay loam; moderate medium and fine subangular blocky structure; friable; common fine roots; common fine continuous tubular pores; 20 percent rounded phyllite and quartzite gravel, by volume; strongly acid; abrupt smooth boundary.
Bt1—11 to 34 inches; red (2.5YR 4/6) gravelly clay; common fine prominent strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; firm; few fine roots; few fine continuous tubular pores; common faint discontinuous clay films on faces of peds; 30 percent rounded phyllite and quartzite gravel, by volume; very strongly acid; clear smooth boundary.
Bt2—34 to 43 inches; red (2.5YR 4/8) clay; many medium prominent strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; firm; few fine roots; common fine continuous tubular pores; common distinct continuous clay films on faces of peds; 5 percent rounded phyllite and quartzite gravel, by volume; very strongly acid; abrupt smooth boundary.
Bt3—43 to 60 inches; red (2.5YR 4/6) clay; moderate medium angular blocky structure; firm; few fine roots; few fine continuous tubular pores; common distinct continuous clay films on faces of peds; 10 percent rounded phyllite and quartzite gravel, by volume; very strongly acid.

Range in Characteristics

Thickness of solum: 40 to more than 60 inches
Depth to bedrock: More than 60 inches
Content of rock fragments: 5 to 40 percent, by volume, in the upper part of the profile; 5 to 60 percent, by volume, in the lower part of the profile
Reaction: Extremely acid to strongly acid throughout the profile, except where surface layers have been limed

Ap horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4
Texture—loam

BA horizon:
Color—hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 4 or 6
Texture—clay loam in the fine-earth fraction

Bt horizon:
Color—hue of 2.5YR, value of 4 or 5, and chroma of 6 or 8
Mottles—none to common in shades of brown or yellow
Texture—clay or clay loam in the fine-earth fraction

Braddock soils in Sevier County are considered taxadjuncts to the series because they are in a kaolinitic mineralogy class. This difference, however, does not significantly affect the use and management of the soils.

Cataska Series

Depth class: Shallow
Drainage class: Excessively drained
Permeability: Moderately rapid or rapid
Parent material: Residuum weathered from slate and phyllite
Landscape: Blue Ridge
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 12 to 80 percent
Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Typic Dystrochrepts

Typical Pedon

Cataska channery silt loam, 25 to 80 percent slopes (fig. 6); about 3.5 miles east of the intersection of U.S. Highway 441 and State Route 66 on U.S. Highway 441, about 5.4 miles south on State Route 416, about 0.5 mile south on Birds Creek Road, 0.1 mile west on Catons Chapel Road, 0.4 mile northeast on Lilly Boulevard, in a road bank; USGS Richardson Cove Topographic Quadrangle; lat. 35 degrees 42 minutes 51 seconds N. and long. 83 degrees 34 minutes 45 seconds W.

A—0 to 2 inches; dark yellowish brown (10YR 4/4) channery silt loam; moderate medium granular structure; friable; common fine roots; 30 percent shale channers, by volume; slightly acid; clear smooth boundary.
Bw1—2 to 8 inches; yellowish brown (10YR 5/6) very channery silt loam; weak fine subangular blocky structure; friable; common fine roots; 45 percent shale channers, by volume; strongly acid; clear smooth boundary.
Bw2—8 to 12 inches; dark yellowish brown (10YR 4/6) extremely channery silt loam; weak fine subangular blocky structure; friable; 70 percent shale channers; strongly acid; clear smooth boundary.
Cr—12 to 40 inches; weathered, fractured slate.

Range in Characteristics

Thickness of solum: 10 to 20 inches
Depth to bedrock: 10 to 20 inches
Content of rock fragments: 15 to 45 percent, by volume, in the A horizon; 30 to 70 percent, by volume, in the Bw horizon
Reaction: Extremely acid to strongly acid throughout the profile

A horizon:
Color—hue of 10YR, value of 3 or 4, and chroma of 2 to 6; value of 3 is limited to thin upper A horizons; soil materials in this horizon have value of 4 when mixed to a depth of 7 inches
Texture—silt loam in the fine-earth fraction

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8
Texture—silt loam or loam in the fine-earth fraction

Cr horizon:
Texture—weathered slate or phyllite

Chiswell Series

Depth class: Shallow
Drainage class: Well drained
Permeability: Moderate
Parent material: Residuum from shale, siltstone, or fine-grained sandstone
Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 25 to 60 percent
Taxonomic class: Loamy-skeletal, mixed, mesic, shallow Typic Dystrochrepts

Typical Pedon

Chiswell channery loam in an area of Muskingum-Chiswell complex, 25 to 60 percent slopes; about 4.5 miles north of the intersection of U.S. Highway 441 and State Route 66 on State Route 66, about 6.8 miles west on State Route 338, about 2.1 miles northwest on Jim Fain Road, 0.6 mile north on Ray Gap Road, 0.6 mile west on a dirt road to a radio tower, 150 feet east of the radio tower near the crest of the ridge; USGS Boyds Creek Topographic Quadrangle; lat. 35 degrees 56 minutes 18 seconds N. and long. 83 degrees 42 minutes 10 seconds W.

Oi—1 inch to 0; partially decomposed hardwood leaves, twigs, and roots.
A—0 to 2 inches; dark brown (10YR 3/3) channery loam; weak medium granular structure; friable; many fine, medium, and coarse roots; 25 percent fine-grained sandstone and siltstone channers and gravel, by volume; moderately acid; abrupt smooth boundary.
Bw1—2 to 7 inches; yellowish brown (10YR 5/4) very channery loam; weak medium subangular blocky structure; friable; common fine, medium, and coarse roots; 35 percent siltstone and fine-grained sandstone channers and gravel, by volume; moderately acid; clear smooth boundary.
Bw2—7 to 16 inches; brown (7.5YR 5/4) very channery loam; weak medium subangular blocky structure; friable; common fine roots; 45 percent siltstone and fine-grained sandstone channers and gravel; strongly acid; abrupt smooth boundary.
Cr—16 to 60 inches; weathered, fractured and interbedded siltstone and sandstone.

Range in Characteristics

Thickness of solum: 5 to 19 inches
Depth to bedrock: 10 to 20 inches
Content of rock fragments: 15 to 60 percent, by volume, in the A horizon; 35 to 80 percent, by volume, in the Bw horizon
Reaction: Extremely acid to moderately acid throughout the profile

A horizon:
Color—hue of 10YR and value and chroma of 3 or 4
Texture—loam in the fine-earth fraction

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 or 6
Texture—loam or silt loam in the fine-earth fraction

Cr horizon:
Texture—weathered siltstone, shale, or fine-grained sandstone

Combs Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately rapid
Parent material: Alluvium washed from materials weathered from quartzite, phyllite, gneiss, schist, shale, and limestone
Landscape: Ridges and Valleys
Landform: Broad flood plains
Landform position: Linear to slightly convex slopes
Slope range: 0 to 2 percent
Taxonomic class: Coarse-loamy, mixed, mesic Fluventic Hapludolls

Typical Pedon

Combs loam, rarely flooded; 6.5 miles north of the intersection of State Route 66 and U.S. Highway 441 on State Route 66, about 0.5 mile west on State Route 338, about 1.4 miles south on Yarberry farm road to a flood plain, 0.2 mile south along a drainageway, 500 feet east of the drainageway and 300 feet north of the French Broad River; USGS Douglas Dam Topographic Quadrangle; lat. 35 degrees 55 minutes 59 seconds N. and long. 83 degrees 35 minutes 47 seconds W.

Ap—0 to 11 inches; dark brown (10YR 3/3) loam; weak medium granular structure; very friable; common fine roots; few fine continuous tubular pores; moderately acid; clear smooth boundary.
A—11 to 23 inches; very dark grayish brown (10YR 3/2) sandy loam; weak fine subangular blocky structure; very friable; few fine roots; few fine and common medium continuous tubular pores; 2 percent quartzite gravel, by volume; moderately acid; clear wavy boundary.
Bw1—23 to 34 inches; dark yellowish brown (10YR 4/4) sandy loam that has thin strata of dark yellowish brown (10YR 3/4) loam; weak coarse subangular blocky structure; very friable; few fine roots; few fine continuous tubular pores; 2 percent quartzite gravel, by volume; moderately acid; clear smooth boundary.
Bw2—34 to 48 inches; dark yellowish brown (10YR 4/4) sandy loam that has thin strata of dark yellowish brown (10YR 3/4) loam; weak coarse subangular blocky structure; very friable; few fine roots; slightly acid; clear wavy boundary.
C—48 to 62 inches; dark yellowish brown (10YR 4/4) sandy loam that has thin strata of yellowish brown (10YR 5/4) sandy loam; massive; very friable; slightly acid.

Range in Characteristics

Thickness of solum: More than 40 inches
Depth to bedrock: More than 60 inches
Thickness of mollic epipedon: 10 to 24 inches
Content of rock fragments: 0 to 5 percent, by volume, throughout the profile
Reaction: Moderately acid to neutral throughout the profile

Ap or A horizon:
Color—hue of 10YR, value of 3, and chroma of 2 or 3
Texture—loam

Bw horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 4 or 6; thin strata with value of 3 and chroma of 4 are common
Texture—loam, sandy loam, or fine sandy loam

C horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 4 or 6
Texture—sandy loam or loam

Decatur Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Old alluvium or residuum weathered from limestone
Landscape: Ridges and Valleys
Landform: High stream terraces and upland ridges
Landform position: Summits and side slopes
Slope range: 2 to 25 percent
Taxonomic class: Clayey, kaolinitic, thermic Rhodic Paleudults

Typical Pedon

Decatur silt loam, 5 to 12 percent slopes, eroded; 6.2 miles north on State Route 66 from the intersection of U.S Highway 411 and State Route 66, about 2.0 miles southeast and then north on Kyker Ferry Road to a farmstead and machinery shed, 400 feet north of the machinery shed, in a pasture; USGS Douglas Dam Topographic Quadrangle; lat. 35 degrees 57 minutes 00 seconds N. and long. 83 degrees 34 minutes 07 seconds W.

Ap—0 to 8 inches; dark reddish brown (5YR 3/3) silt loam; moderate fine granular structure; friable; common fine roots; common fine continuous

tubular pores; 2 percent chert and quartzite gravel, by volume; moderately acid; abrupt smooth boundary.
Bt1—8 to 25 inches; dark reddish brown (2.5YR 3/4) clay; moderate medium subangular blocky structure; friable; common fine roots; common fine continuous tubular pores; common faint continuous clay films on faces of peds; 2 percent chert and quartzite gravel, by volume; moderately acid; clear smooth boundary.
Bt2—25 to 41 inches; dark reddish brown (2.5YR 3/4) clay; moderate medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; many distinct continuous clay films on faces of peds; 2 percent chert and quartzite gravel, by volume; moderately acid; gradual smooth boundary.
Bt3—41 to 60 inches; dark reddish brown (2.5YR 3/4) clay; moderate medium angular and subangular blocky structure; friable; few fine continuous tubular pores; many distinct continuous clay films on faces of peds; 5 percent chert and quartzite gravel, by volume; strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches
Depth to bedrock: More than 60 inches
Content of rock fragments: 0 to 10 percent, by volume, throughout the profile
Reaction: Very strongly acid to moderately acid throughout the profile, except where surface layers have been limed

Ap horizon:
Color—hue of 2.5YR or 5YR, value of 2 or 3, and chroma of 3 or 4
Texture—silt loam

Bt horizon:
Color—hue of 10R or 2.5YR, value of 3, and chroma of 4 or 6
Texture—clay or silty clay

Dewey Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Residuum weathered from limestone
Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 2 to 25 percent
Taxonomic class: Clayey, kaolinitic, thermic Typic Paleudults

Typical Pedon

Dewey silt loam, 5 to 12 percent slopes, eroded (fig. 7); 6.2 miles north on State Route 66 from the intersection of U.S Highway 411 and State Route 66, about 0.5 mile southeast on Kyker Ferry Road, 0.3 mile east to a farmstead, 0.2 mile east of the farmstead, in a pasture; USGS Douglas Dam Topographic Quadrangle; lat. 32 degrees 32 minutes 06 seconds N. and long. 83 degrees 57 minutes 00 seconds W.

Ap—0 to 8 inches; dark reddish brown (5YR 3/3) silt loam; moderate medium granular structure; friable; many fine roots; 2 percent chert gravel, by volume; slightly acid; clear wavy boundary.
BA—8 to 20 inches; reddish brown (5YR 4/4) clay loam; moderate fine subangular blocky structure; friable; many fine roots; 2 percent chert gravel, by volume; strongly acid; clear smooth boundary.
Bt1—20 to 31 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky structure; friable; common fine roots; common fine continuous tubular pores; common distinct discontinuous clay films on faces of peds; 5 percent chert gravel, by volume; strongly acid; clear wavy boundary.
Bt2—31 to 40 inches; red (2.5YR 4/6) clay; few medium prominent light brown (7.5YR 6/4) mottles; moderate medium subangular blocky structure; friable; few fine roots; many distinct continuous clay films on faces of peds; 5 percent chert gravel, by volume; strongly acid; clear smooth boundary.
Bt3—40 to 51 inches; dark red (2.5YR 3/6) clay; common medium prominent light brown (7.5YR 6/4) mottles; moderate medium angular blocky structure; friable; few fine roots; many distinct continuous clay films on faces of peds; 5 percent chert gravel, by volume; strongly acid; clear smooth boundary.
Bt4—51 to 60 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky structure; friable; common distinct continuous clay films on faces of peds; 10 percent chert gravel, by volume; strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches
Depth to bedrock: More than 60 inches
Content of rock fragments: 0 to 15 percent, by volume, throughout the profile
Reaction: Very strongly acid or strongly acid throughout the profile, except where surface layers have been limed

Ap horizon:
Color—hue of 5YR or 7.5YR and value and chroma of 3 or 4
Texture—silt loam

BA horizon:
Color—hue of 5YR or 7.5YR, value of 4, and chroma of 4 or 6
Texture—silt loam, silty clay loam, or clay loam

Bt horizon:
Color—hue of 2.5YR or 5YR, value of 3 to 5, and chroma of 6 or 8
Mottles—common or many in shades of brown or yellow
Texture—clay or silty clay

Ditney Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately rapid
Parent material: Residuum weathered from arkosic metasandstone, quartzite, or graywacke
Landscape: Blue Ridge
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 12 to 80 percent
Taxonomic class: Coarse-loamy, mixed, mesic Typic Dystrochrepts

Typical Pedon

Ditney sandy loam, 12 to 25 percent slopes (fig. 8); about 4.7 miles south of the intersection of U.S. Highway 441 and State Route 66 on U.S. Highway 441, about 2.8 miles southwest on U.S. Highway 231, about 0.5 mile west on Walden Creek Road, 0.5 mile west on Goose Gap Road, 4.1 miles north on Bluff Mountain Road, 0.8 mile west on Tower Road to a road bank; USGS Walden Creek Topographic Quadrangle; lat. 35 degrees 48 minutes 33 seconds N. and long. 83 degrees 39 minutes 56 seconds W.

A—0 to 4 inches; brown (10YR 4/3) sandy loam; moderate fine granular structure; very friable; many medium and few coarse roots; 5 percent sandstone gravel, by volume; very strongly acid; clear smooth boundary.
BA—4 to 9 inches; yellowish brown (10YR 5/4) sandy loam; weak medium subangular blocky structure; friable; common fine and medium roots; 5 percent sandstone gravel, by volume; very strongly acid; clear smooth boundary.
Bw1—9 to 18 inches; yellowish brown (10YR 5/6) sandy loam; moderate medium subangular blocky structure; friable; few fine and medium roots; 5 percent sandstone gravel, by volume; strongly acid; clear smooth boundary.
Bw2—18 to 29 inches; strong brown (7.5YR 5/8) sandy loam; weak medium subangular blocky structure; friable; few fine and medium roots; 5 percent sandstone gravel, by volume; very strongly acid; clear wavy boundary.
C—29 to 36 inches; strong brown (7.5YR 5/8) sandy loam; common medium distinct brownish yellow (10YR 6/6) mottles; massive; friable; 10 percent sandstone gravel, by volume; very strongly acid; clear smooth boundary.
R—36 inches; unweathered arkosic metasandstone.

Range in Characteristics

Thickness of solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Content of rock fragments: 5 to 35 percent, by volume, in the A and Bw horizons; 10 to 20 percent, by volume, in the C horizon
Reaction: Extremely acid to strongly acid throughout the profile

A horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 1 to 4; value of 3 is limited to thin upper A horizons; soil materials in this horizon have value of 4 or more when mixed to a depth of 7 inches
Texture—sandy loam

BA horizon:
Color—hue of 10YR, value of 4 to 6, and chroma of 3 to 6
Texture—sandy loam or loam

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 8
Texture—sandy loam or loam

C horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8
Mottles—common or many in shades of brown or yellow
Texture—sandy loam or loam

R horizon:
Texture—unweathered arkosic metasandstone, quartzite, or graywacke

Dunning Series

Depth class: Very deep
Drainage class: Poorly drained

Permeability: Slow
Parent material: Alluvium
Landscape: Ridges and Valleys
Landform: Flood plains
Landform position: Linear slopes and depressions
Slope range: 0 to 2 percent
Taxonomic class: Fine, mixed, mesic Fluvaquentic Endoaquolls

Typical Pedon

Dunning silty clay loam, occasionally flooded; 0.3 mile south of the intersection of U.S. Highway 441 and State Route 66 on U.S. Highway 441, about 0.3 mile southeast on Park Road, 0.5 mile south on Ridge Road to the City of Sevierville garage, 400 feet west along a fence row, 50 feet north of the fence row in a hay field; USGS Pigeon Forge Topographic Quadrangle; lat. 35 degrees 56 minutes 03 seconds N. and long. 83 degrees 33 minutes 26 seconds W.

Ap—0 to 12 inches; very dark gray (10YR 3/1) silty clay loam; moderate fine and medium subangular blocky structure; friable; many fine roots; few fine continuous tubular pores; 10 percent gravel, by volume; moderately acid; clear smooth boundary.
Bg1—12 to 19 inches; dark gray (10YR 4/1) clay; weak medium subangular blocky structure; firm; few fine roots; common fine continuous tubular pores; 10 percent gravel, by volume; few fine prominent strong brown (7.5YR 5/6) irregularly shaped masses of iron concentration in the matrix; few fine and medium dark reddish brown (5YR 3/2) concretions; neutral; clear smooth boundary.
Bg2—19 to 26 inches; dark gray (10YR 4/1) clay; weak medium subangular blocky structure; firm; few fine roots; common fine and medium continuous tubular pores; 10 percent gravel, by volume; common medium distinct yellowish brown (10YR 5/6) irregularly shaped masses of iron concentration in the matrix; common fine and medium dark reddish brown (5YR 3/2) concretions; slightly alkaline; clear smooth boundary.
BCg—26 to 34 inches; dark gray (10YR 4/1) clay; weak medium subangular blocky structure; firm; few fine roots; common fine continuous tubular pores; 10 percent gravel and cobbles, by volume; many medium prominent yellowish brown (10YR 5/6) irregularly shaped masses of iron concentration in the matrix; common fine to coarse dark reddish brown (5YR 3/2) concretions; slightly alkaline; clear smooth boundary.
Cg—34 to 60 inches; dark gray (10YR 4/1) gravelly clay; massive; firm; few fine roots; common fine continuous tubular pores; 25 percent gravel and 5 percent cobbles, by volume; many medium prominent yellowish brown (10YR 5/6) irregularly shaped masses of iron concentration in the matrix; common fine to coarse dark reddish brown (5YR 3/2) concretions; slightly alkaline.

Range in Characteristics

Thickness of solum: 30 to 60 inches
Depth to bedrock: More than 60 inches
Thickness of mollic epipedon: 10 to 24 inches
Content of rock fragments: 0 to 10 percent, by volume, in the upper 30 inches; less than 35 percent, by volume, below a depth of 30 inches
Reaction: Moderately acid to slightly alkaline throughout the profile

Ap horizon:
Color—hue of 10YR or 2.5Y or neutral in hue, value of 3, and chroma of 1 to 3
Texture—silty clay loam

Bg horizon:
Color—hue of 10YR to 5Y or neutral in hue, value of 3 or 4, and chroma of 1 or 2
Texture—clay
Redoximorphic features—few to many masses of iron concentration in shades of brown

BCg horizon:
Color—horizon has hue of 10YR to 5Y, value of 4 or 5, and chroma of 1 or 2, or it is neutral in hue and has value of 4 to 6
Texture—clay
Redoximorphic features—many masses of iron concentration in shades of brown

Cg horizon:
Color—horizon has hue of 10YR to 5Y, value of 4 or 5, and chroma of 1 or 2, or it is neutral in hue and has value of 4 to 6
Texture—clay in the fine-earth fraction
Redoximorphic features—many masses of iron concentration in shades of brown

Etowah Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Alluvium
Landscape: Ridges and Valleys
Landform: Stream terraces and alluvial fans
Landform position: Summits, footslopes, and toeslopes

Slope range: 2 to 12 percent
Taxonomic class: Fine-loamy, siliceous, thermic Typic Paleudults

Typical Pedon

Etowah loam, 2 to 5 percent slopes; 3.6 miles north on State Route 411 from the intersection of U.S Highway 411 and State Route 66, about 0.7 mile south on State Route 416, about 0.4 mile northeast on Harrisburg Mill Road, 1,000 feet south of Harrisburg Mill Road, in a pasture; USGS Richardson Cove Topographic Quadrangle; lat. 35 degrees 51 minutes 43 seconds N. and long. 83 degrees 29 minutes 37 seconds W.

Ap—0 to 10 inches; dark brown (10YR 3/3) loam; moderate fine granular structure; friable; common fine roots; neutral; abrupt smooth boundary.
A—10 to 14 inches; very dark grayish brown (10YR 3/2) loam; moderate medium granular structure; friable; common fine roots; common fine continuous tubular pores; neutral; abrupt wavy boundary.
BA—14 to 24 inches; brown (7.5YR 4/4) clay loam; weak medium and fine subangular blocky structure; friable; common fine roots; common fine continuous tubular pores; strongly acid; clear smooth boundary.
Bt1—24 to 36 inches; strong brown (7.5YR 5/6) clay loam; moderate medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; common discontinuous clay films on faces of peds; 10 percent chert gravel, by volume; strongly acid; clear smooth boundary.
Bt2—36 to 48 inches; strong brown (7.5YR 5/6) clay loam; common medium distinct yellowish brown (10YR 5/6) and yellowish red (5YR 4/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; many distinct continuous clay films on faces of peds; 5 percent chert gravel, by volume; strongly acid; clear smooth boundary.
Bt3—48 to 60 inches; yellowish red (5YR 5/6) clay loam; few medium distinct brown (7.5YR 4/4) mottles; moderate medium subangular blocky structure; friable; few fine continuous tubular pores; many distinct continuous clay films on faces of peds; 5 percent chert gravel, by volume; few fine iron and manganese concretions; strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches
Depth to bedrock: More than 60 inches
Content of rock fragments: 0 to 15 percent, by volume, throughout the profile
Reaction: Very strongly acid or strongly acid throughout the profile, except where surface layers have been limed

A or Ap horizon:
Color—hue of 10YR, value of 3, and chroma of 2 to 4
Texture—loam

BA horizon:
Color—hue of 7.5YR, value of 4 or 5, and chroma of 4 or 6
Texture—loam or clay loam

Bt horizon:
Color—hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 6 or 8
Mottles—few to many in shades of brown, yellow, or red
Texture—clay loam or silty clay loam

Fullerton Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Residuum weathered from cherty dolomite
Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 5 to 60 percent
Taxonomic class: Clayey, kaolinitic, thermic Typic Paleudults

Typical Pedon

Fullerton gravelly silt loam, 12 to 25 percent slopes, eroded; 6.7 miles north on State Route 66 from the intersection of U.S Highway 411 and State Route 66, about 1.8 miles east on State Route 139 to Underwood Cemetery Road, 350 feet northwest of Underwood Cemetery; USGS Douglas Dam Topographic Quadrangle; lat. 35 degrees 58 minutes 13 seconds N. and long. 83 degrees 34 minutes 05 seconds W.

Ap—0 to 7 inches; brown (10YR 4/3) gravelly silt loam; moderate medium granular structure; friable; many fine roots; few fine continuous tubular pores; 20 percent chert gravel, by volume; neutral; clear smooth boundary.
E—7 to 11 inches; yellowish brown (10YR 5/4)

gravelly silt loam; moderate fine granular and weak fine subangular blocky structure; friable; common fine roots; common fine continuous tubular pores; 25 percent chert gravel, by volume; strongly acid; clear smooth boundary.

BE—11 to 16 inches; yellowish brown (10YR 5/6) gravelly silt loam; common medium faint brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; friable; common fine roots; common fine continuous tubular pores; few faint discontinuous clay films on faces of peds; 20 percent chert gravel, by volume; strongly acid; clear smooth boundary.

Bt1—16 to 26 inches; yellowish red (5YR 5/6) gravelly clay; few fine distinct red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; common distinct discontinuous clay films on faces of peds; 20 percent chert gravel, by volume; strongly acid; clear smooth boundary.

Bt2—26 to 34 inches; yellowish red (5YR 4/6) gravelly clay; common medium distinct red (2.5YR 4/6) and common medium prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; many distinct continuous clay films on faces of peds; 20 percent chert gravel, by volume; strongly acid; clear smooth boundary.

Bt3—34 to 52 inches; red (2.5YR 4/6) gravelly clay; many medium prominent strong brown (7.5YR 5/8) mottles; moderate medium angular and subangular blocky structure; friable; few fine continuous tubular pores; many distinct continuous clay films on faces of peds; 25 percent chert gravel, by volume; strongly acid; clear smooth boundary.

Bt4—52 to 60 inches; red (2.5YR 4/6) gravelly clay; many medium prominent strong brown (7.5YR 5/8) mottles; moderate medium angular and subangular blocky structure; friable; common fine continuous tubular pores; common distinct continuous clay films on faces of peds; 20 percent chert gravel, by volume; strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches
Depth to bedrock: More than 60 inches
Content of rock fragments: 15 to 35 percent, by volume, throughout the profile
Reaction: Very strongly acid or strongly acid throughout the profile, except where surface layers have been limed

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4
Texture—silt loam in the fine-earth fraction

E horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4
Texture—silt loam in the fine-earth fraction

BE horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6
Mottles—few to many in shades of brown or yellow
Texture—silt loam in the fine-earth fraction

Bt horizon:
Color—hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8
Mottles—few to many in shades of brown or yellow
Texture—clay in the fine-earth fraction

Holston Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Old alluvium
Landscape: Ridges and Valleys
Landform: High stream terraces
Landform position: Summits and side slopes
Slope range: 2 to 12 percent
Taxonomic class: Fine-loamy, siliceous, thermic Typic Paleudults

Typical Pedon

Holston loam, 5 to 12 percent slopes; 2.7 miles north on State Route 66 from the intersection of U.S Highway 411 and State Route 66, about 2.9 miles northeast on State Route 338, about 0.5 mile east on Providence Road to Providence Baptist Church, 100 feet west of Providence Baptist Church, in a wooded area; USGS Douglas Dam Topographic Quadrangle; lat. 35 degrees 55 minutes 26 seconds N. and long. 83 degrees 31 minutes 26 seconds W.

A1—0 to 3 inches; brown (10YR 4/3) loam; moderate fine granular structure; very friable; many fine and coarse roots; common fine continuous tubular pores; 2 percent rounded quartzite gravel, by volume; moderately acid; clear smooth boundary.

A2—3 to 10 inches; brown (10YR 5/3) loam; moderate

fine granular structure; very friable; many fine, medium, and coarse roots; common fine continuous tubular pores; 2 percent rounded quartzite gravel, by volume; moderately acid; clear smooth boundary.

BE—10 to 18 inches; yellowish brown (10YR 5/4) loam; moderate medium subangular blocky structure; friable; common fine and medium roots; common fine continuous tubular pores; 2 percent rounded quartzite gravel, by volume; strongly acid; gradual smooth boundary.

Bt1—18 to 27 inches; yellowish brown (10YR 5/6) clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; common fine continuous tubular pores; common faint discontinuous clay films on faces of peds; 2 percent rounded quartzite gravel, by volume; very strongly acid; clear smooth boundary.

Bt2—27 to 38 inches; strong brown (7.5YR 5/6) clay loam; common medium distinct yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; many distinct continuous clay films on faces of peds; very strongly acid; clear smooth boundary.

Bt3—38 to 48 inches; strong brown (7.5YR 5/6) clay; many medium distinct yellowish red (5YR 5/6) mottles; moderate medium angular blocky structure; friable; few fine roots; few fine continuous tubular pores; many distinct continuous clay films on faces of peds; very strongly acid; clear smooth boundary.

Bt4—48 to 60 inches; yellowish red (5YR 4/6) clay; many medium distinct strong brown (7.5YR 5/8) mottles; moderate medium angular blocky structure; friable; few fine roots; common fine continuous tubular pores; common distinct continuous clay films on faces of peds; very strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches
Depth to bedrock: More than 60 inches
Content of rock fragments: 0 to 15 percent, by volume, throughout the profile
Reaction: Very strongly acid or strongly acid throughout the profile, except where surface layers have been limed

A or Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4
Texture—loam

BE horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—loam

Bt horizon:
Color—hue of 7.5YR or 10YR, value of 5, and chroma of 6 or 8 in the upper part; hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 6 or 8 in the lower part
Mottles—none to many in shades of brown, yellow, or red
Texture—clay loam in the upper part; clay in the lower part

Junaluska Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Residuum weathered from metasiltstone, slate, or thinly bedded metasandstone
Landscape: Blue Ridge
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 12 to 25 percent
Taxonomic class: Fine-loamy, mixed, mesic Typic Hapludults

Typical Pedon

Junaluska silt loam in an area of Junaluska-Cataska complex, 12 to 25 percent slopes; about 3.4 miles east of the intersection of U.S. Highway 411 and State Route 66 on U.S. Highway 411, about 6.9 miles southeast on State Route 416, about 0.4 mile southeast on Richardson Cove Road, 2.1 miles south on Locust Ridge Road to a site in a road bank; USGS Richardson Cove Topographic Quadrangle; lat. 35 degrees 47 minutes 59 seconds N. and long. 83 degrees 22 minutes 42 seconds W.

A—0 to 3 inches; yellowish brown (10YR 5/6) silt loam; moderate medium granular structure; friable; common fine and medium roots; 2 percent metasiltstone channers, by volume; very strongly acid; clear smooth boundary.

Bt1—3 to 12 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; common fine continuous tubular pores; common faint clay films on faces of peds; 2 percent metasiltstone channers, by volume; very strongly acid; clear smooth boundary.

Bt2—12 to 22 inches; strong brown (7.5YR 5/6) channery silty clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; common fine continuous tubular pores; common faint discontinuous clay films on faces of peds; 20 percent metasiltstone channers, by volume; very strongly acid; clear smooth boundary.
Bt3—22 to 29 inches; yellowish red (5YR 5/6) channery silty clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; common fine continuous tubular pores; common faint discontinuous clay films on faces of peds; 15 percent metasiltstone channers, by volume; very strongly acid; abrupt smooth boundary.
Cr—29 to 40 inches; weathered, fractured metasiltstone.

Range in Characteristics

Thickness of solum: 15 to 39 inches
Depth to bedrock: 20 to 40 inches
Content of rock fragments: 0 to 35 percent, by volume, throughout the profile
Reaction: Extremely acid to moderately acid throughout the profile

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 3 to 6; value of 3 is limited to thin upper A horizons; soil materials in this horizon have value of 4 or more when mixed to a depth of 7 inches
Texture—silt loam

Bt horizon:
Color—hue of 5YR or 7.5YR, value of 4 to 6, and chroma of 4 to 8
Texture—silty clay loam, clay loam, or loam in the fine-earth fraction

Cr horizon:
Texture—weathered metasiltstone, slate, or thinly bedded metasandstone

Leadvale Series

Depth class: Deep
Drainage class: Moderately well drained
Permeability: Slow or moderately slow
Parent material: Residuum weathered from shale, siltstone, or sandstone
Landscape: Ridges and Valleys
Landform: Stream terraces and alluvial fans
Landform position: Footslopes
Slope range: 2 to 5 percent
Taxonomic class: Fine-silty, siliceous, thermic Typic Fragiudults

Typical Pedon

Leadvale silt loam, 2 to 5 percent slopes; from the intersection of U.S. Highway 441 and State Route 66, about 12.6 miles northwest on U.S. Highway 441, about 3.9 miles northeast on State Route 338, about 0.7 mile southeast on Gibson Circle, 0.1 mile southeast on a private driveway to a homestead, 0.5 mile southeast of the homestead along a field road to the beginning of a second fence row, 100 feet southeast in a field; USGS Boyds Creek Topographic Quadrangle; lat. 35 degrees 54 minutes 02 seconds N. and long. 83 degrees 41 minutes 08 seconds W.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam; moderate fine granular structure; friable; common fine roots; common fine continuous tubular pores; very strongly acid; abrupt smooth boundary.
Bt—9 to 17 inches; brownish yellow (10YR 6/6) silt loam; weak medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; few distinct discontinuous clay films on faces of peds; common fine and medium iron and manganese concretions; strongly acid; clear smooth boundary.
Btx1—17 to 31 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to strong medium and fine subangular blocky; very firm; few fine roots on faces of prisms; few fine discontinuous tubular pores; few faint discontinuous clay films on faces of peds; few fine distinct strong brown (7.5YR 5/6) irregularly shaped masses of iron concentration in the matrix; common fine and medium iron and manganese stains and concretions; very strongly acid; clear smooth boundary.
Btx2—31 to 44 inches; yellowish brown (10YR 5/8) clay; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; common fine continuous tubular pores; few faint discontinuous clay films on faces of peds; common medium prominent light brownish gray (10YR 6/2) irregularly shaped masses of iron depletion and few fine faint strong brown (7.5YR 5/6) irregularly shaped masses of iron concentration in the matrix; common fine and medium manganese concretions and stains; very strongly acid; clear smooth boundary.
B´t—44 to 55 inches; yellowish brown (10YR 5/6) clay; weak medium subangular blocky structure; firm; few fine continuous tubular pores; few faint clay films on faces of peds; common medium distinct

light brownish gray (10YR 6/2) irregularly shaped masses of iron depletion in the matrix; common fine and medium manganese stains and concretions; strongly acid; abrupt smooth boundary.
Cr—55 to 62 inches; weathered, weakly consolidated shale.

Range in Characteristics

Thickness of solum: 40 to 60 inches
Depth to bedrock: 48 to more than 96 inches
Depth to fragipan: 16 to 38 inches
Content of rock fragments: 0 to 10 percent, by volume, throughout the profile
Reaction: Very strongly acid or strongly acid throughout the profile

A or Ap horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 2 or 3
Texture—silt loam

Bt horizon:
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8
Texture—silt loam, loam, or silty clay loam
Redoximorphic features—none or few masses of iron concentration in shades of brown; none or few masses of iron depletion in shades of gray

Btx horizon:
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8
Texture—silt loam or silty clay loam
Redoximorphic features—none or few masses of iron concentration in shades of brown; none or few masses of iron depletion in shades of gray

B´t horizon:
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8
Texture—silty clay loam, silty clay, or clay
Redoximorphic features—none or few masses of iron concentration in shades of brown; common or many masses of iron depletion in shades of gray

Cr horizon:
Texture—weathered shale, siltstone, or sandstone

Lonon Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Colluvium or alluvium weathered or washed from metasiltstone, slate, or metasandstone
Landscape: Blue Ridge
Landform: Colluvial or alluvial fans
Landform position: Footslopes and toeslopes
Slope range: 2 to 25 percent
Taxonomic class: Fine-loamy, mixed, mesic Typic Hapludults

Typical Pedon

Lonon gravelly loam, 5 to 12 percent slopes; 700 feet northwest on Burns Road from the intersection of U.S Highway 321 and Burns Road, 300 feet southwest in a field; USGS Wear Cove Topographic Quadrangle; lat. 35 degrees 43 minutes 30 seconds N. and long. 83 degrees 39 minutes 15 seconds W.

Ap—0 to 8 inches; brown (10YR 4/3) gravelly loam; moderate medium granular structure; friable; many fine and medium roots; common fine continuous tubular pores; 20 percent rounded gravel, by volume; slightly acid; abrupt smooth boundary.
E—8 to 13 inches; yellowish brown (10YR 5/4) gravelly loam; weak medium subangular blocky structure; friable; common fine roots; common fine continuous tubular pores; 20 percent rounded gravel, by volume; moderately acid; clear smooth boundary.
Bt1—13 to 22 inches; yellowish red (5YR 5/8) clay loam; few fine distinct strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; common faint discontinuous clay films on faces of peds; 5 percent rounded gravel, by volume; moderately acid; clear smooth boundary.
Bt2—22 to 47 inches; yellowish red (5YR 5/8) gravelly clay loam; moderate medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; many distinct discontinuous clay films on faces of peds; 30 percent rounded gravel, by volume; strongly acid; clear smooth boundary.
BC—47 to 60 inches; yellowish red (5YR 5/8) gravelly loam; few medium distinct yellowish red (5YR 5/6) mottles; weak medium subangular blocky structure; friable; few fine continuous tubular pores; few faint clay films on faces of peds; 15 percent rounded gravel, by volume; very strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches
Depth to bedrock: More than 60 inches

Content of rock fragments: Less than 35 percent, by volume, to a depth of 40 inches; as much as 60 percent, by volume, below a depth of 40 inches
Reaction: Extremely acid to moderately acid throughout the profile, except where surface layers have been limed

A or Ap horizon:
Color—hue of 10YR, value of 4, and chroma of 3 or 4
Texture—loam in the fine-earth fraction

E horizon:
Color—hue of 10YR, value of 5, and chroma of 4 or 6
Texture—loam in the fine-earth fraction

Bt horizon:
Color—hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 6 or 8
Mottles—few to many in shades of brown, yellow, or red
Texture—clay loam in the fine-earth fraction

BC horizon:
Color—hue of 5YR, value of 4 or 5, and chroma of 6 or 8
Mottles—few to many in shades of brown, yellow, or red
Texture—loam or clay loam in the fine-earth fraction

Lostcove Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Colluvium weathered from metasandstone or slate
Landscape: Blue Ridge
Landform: Colluvial fans
Landform position: Footslopes and toeslopes
Slope range: 5 to 25 percent
Taxonomic class: Loamy-skeletal, mixed, mesic Typic Hapludults

Typical Pedon

Lostcove very cobbly loam, 5 to 12 percent slopes, extremely bouldery; 1.9 miles southeast on Valley View Road from the junction of U.S Highway 321 and Valley View Road, 700 feet east on the left fork of Sugar Camp Road to a bend in the road, 800 feet south into a pasture; USGS Gatlinburg Topographic Quadrangle; lat. 35 degrees 43 minutes 28 seconds N. and long. 83 degrees 36 minutes 09 seconds W.

Ap—0 to 8 inches; brown (10YR 4/3) very cobbly loam; moderate medium granular structure; friable; many fine and medium roots; common fine continuous tubular pores; 25 percent gravel and 15 percent cobbles, by volume; strongly acid; abrupt smooth boundary.
Bt1—8 to 14 inches; brown (7.5YR 4/4) very cobbly clay loam; weak medium subangular blocky structure; friable; many fine and medium roots; common fine continuous tubular pores; few faint clay films on faces of peds; 25 percent gravel and 15 percent cobbles, by volume; moderately acid; clear smooth boundary.
Bt2—14 to 31 inches; strong brown (7.5YR 5/6) very cobbly clay loam; moderate medium subangular blocky structure; friable; many fine and medium roots; common fine continuous tubular pores; common faint discontinuous clay films on faces of peds; 25 percent gravel and 20 percent cobbles, by volume; strongly acid; clear smooth boundary.
Bt3—31 to 42 inches; strong brown (7.5YR 5/6) very cobbly loam; weak medium subangular blocky structure; friable; common fine and medium roots; common fine continuous tubular pores; few fine discontinuous clay films on faces of peds; 20 percent gravel and 30 percent cobbles, by volume; strongly acid; clear smooth boundary.
BC—42 to 72 inches; yellowish brown (10YR 5/6) very cobbly loam; common medium distinct strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; friable; few fine continuous tubular pores; 20 percent gravel and 30 percent cobbles, by volume; very strongly acid.

Range in Characteristics

Thickness of solum: 30 to 60 inches
Depth to bedrock: More than 72 inches
Content of rock fragments: 15 to 60 percent, by volume, in the upper part of the profile; 35 to 80 percent, by volume, in the lower part of the profile
Reaction: Extremely acid to moderately acid throughout the profile

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 3 or 4; value of 3 is limited to thin upper A horizons; soil materials in this horizon have value of 4 or more when mixed to a depth of 7 inches
Texture—loam in the fine-earth fraction

Bt horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8

Mottles—few to many in shades of brown or yellow
Texture—loam or clay loam in the fine-earth fraction

BC horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8
Mottles—few to many in shades of brown or yellow
Texture—loam or sandy loam in the fine-earth fraction

Lostcove soils in Sevier County are considered taxadjuncts to the series because they are in a mixed mineralogy class. This difference, however, does not significantly affect the use and management of the soils.

Montevallo Series

Depth class: Shallow
Drainage class: Well drained
Permeability: Moderate
Parent material: Residuum weathered from acid shale
Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 5 to 25 percent
Taxonomic class: Loamy-skeletal, mixed, thermic, shallow Typic Dystrochrepts

Typical Pedon

Montevallo channery silt loam, 5 to 12 percent slopes, eroded; 12.6 miles northwest of the intersection of U.S. Highway 441 and State Route 66 on U.S. Highway 441, about 2.3 miles northeast on State Route 338, about 1.5 miles north on Porterfield Gap Road, 1.6 miles east on East Union Gap Road, 0.5 mile north on Union Valley Church Road to Union Valley Church, 0.25 mile northeast to a road cut beside a pasture; USGS Boyds Creek Topographic Quadrangle; lat. 35 degrees 55 minutes 34 seconds N. and long. 83 degrees 42 minutes 45 seconds W.

Ap—0 to 5 inches; brown (10YR 4/3) channery silt loam; weak fine granular structure; very friable; common fine roots; few fine continuous tubular pores; 25 percent shale channers, by volume; neutral; abrupt smooth boundary.
Bw1—5 to 12 inches; yellowish brown (10YR 5/6) very channery silt loam; weak medium subangular blocky structure; friable; common fine and medium and few coarse roots; common very fine and few fine continuous tubular pores; 40 percent shale channers, by volume; moderately acid; clear smooth boundary.
Bw2—12 to 17 inches; yellowish brown (10YR 5/6) very channery silt loam; weak medium subangular blocky structure; friable; few very fine and fine continuous tubular pores; 45 percent shale channers, by volume; moderately acid; clear smooth boundary.
Cr—17 to 38 inches; weathered, fractured shale.
R—38 inches; unweathered shale.

Range in Characteristics

Thickness of solum: 10 to 20 inches
Depth to bedrock: 10 to 20 inches
Content of rock fragments: 15 to 60 percent, by volume, in the A horizon; 35 to 80 percent, by volume, in the Bw horizon
Reaction: Very strongly acid to moderately acid throughout the profile, except where surface layers have been limed

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 2 to 6, and chroma of 1 to 4
Texture—silt loam in the fine-earth fraction

Bw horizon:
Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8
Texture—silt loam, loam, clay loam, or silty clay loam in the fine-earth fraction

Cr horizon:
Texture—weathered acid shale

R horizon:
Texture—unweathered acid shale

Muse Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Slow
Parent material: Colluvium weathered from siltstone or shale
Landscape: Ridges and Valleys
Landform: Colluvial fans
Landform position: Footslopes and toeslopes
Slope range: 5 to 12 percent
Taxonomic class: Clayey, mixed, mesic Typic Hapludults

Typical Pedon

Muse silt loam, 5 to 12 percent slopes, eroded (fig. 9); 4.7 miles south on U.S. Highway 441 from the intersection of U.S. Highway 441 and State Route 66,

Figure 5.—Typical profile of Braddock loam. Braddock soils are well drained and very deep. They formed in alluvium and colluvium on high stream terraces and colluvial fans of the Blue Ridge landscape. Depth is marked in feet.

Figure 6.—Typical profile of Cataska channery silt loam. Cataska soils are excessively drained and shallow. They formed in residuum weathered from slate and phyllite of the Blue Ridge landscape. In this profile, weathered slate bedrock occurs at a depth of 1.0 foot. Depth is marked in feet.

Figure 7.—Typical profile of Dewey silt loam. Dewey soils are well drained and very deep. They formed in residuum weathered from limestone of the Ridges and Valleys landscape. Depth is marked in feet.

Figure 8.—Typical profile of Ditney sandy loam. Ditney soils are well drained and moderately deep. They formed in residuum weathered from metasandstone, quartzite, or graywacke of the Blue Ridge landscape. In this profile, hard metasandstone bedrock occurs at a depth of 3.0 feet. Depth is marked in feet.

Figure 9.—Typical profile of Muse silt loam. Muse soils are well drained and very deep. They formed in colluvium weathered from siltstone and shale of the Ridges and Valleys landscape. Depth is marked in feet.

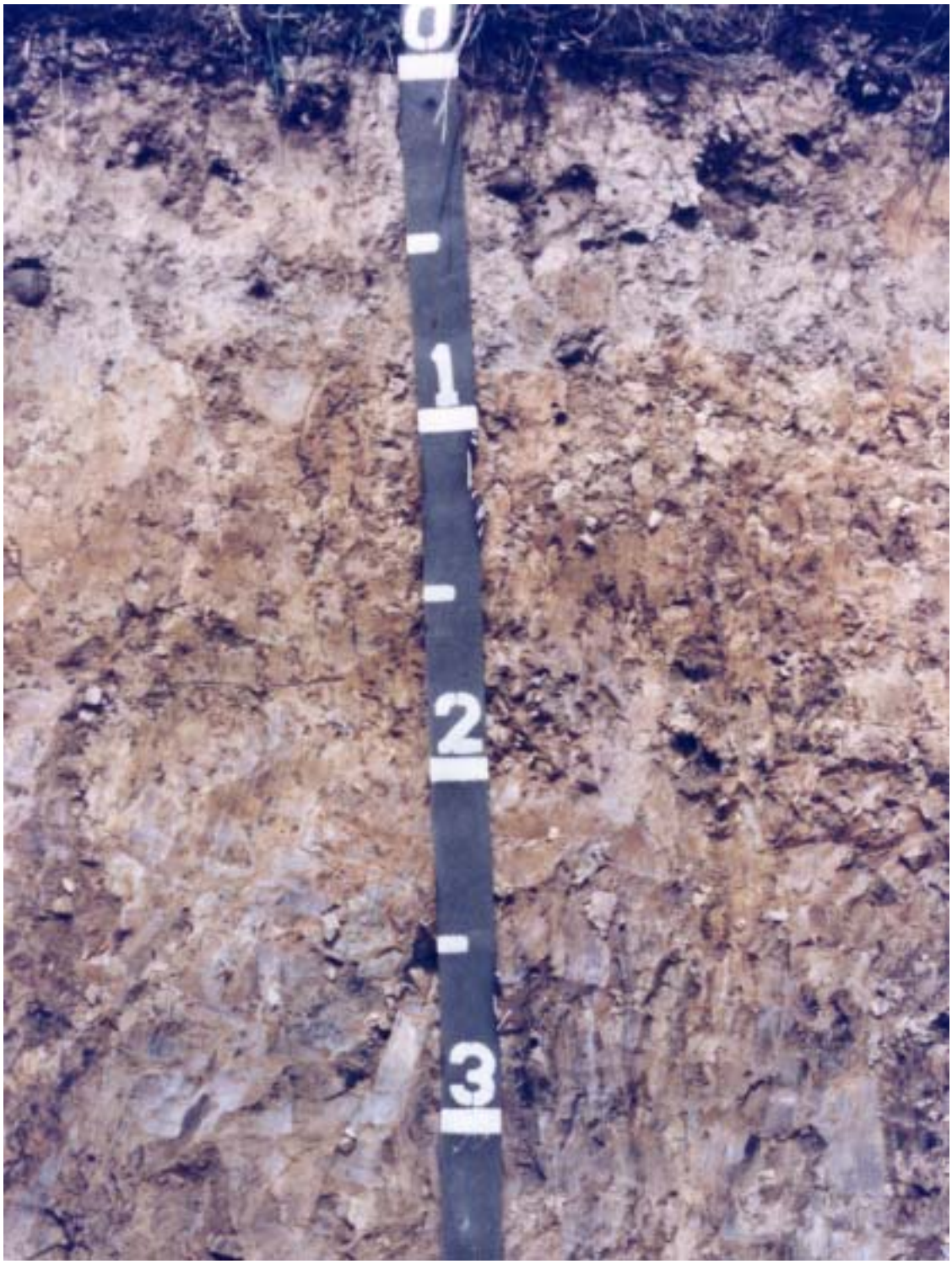

Figure 10.—Typical profile of Townley silt loam. Townley soils are well drained and moderately deep. They formed in residuum weathered from shale and siltstone of the Ridges and Valleys landscape. In this profile, weathered, fractured shale bedrock occurs at a depth of approximately 2.5 feet. Depth is marked in feet.

about 0.5 mile north on Davis Road to a road bank behind Belz Mall, at the edge of a pasture; USGS Pigeon Forge Topographic Quadrangle; lat. 35 degrees 48 minutes 30 seconds N. and long. 83 degrees 34 minutes 16 seconds W.

A—0 to 6 inches; brown (10YR 4/3) silt loam; moderate fine and medium granular structure; friable; common fine roots; few fine and medium manganese concretions; moderately acid; clear wavy boundary.

AB—6 to 14 inches; dark yellowish brown (10YR 4/4) silt loam; many medium faint pale brown (10YR 6/3) mottles; weak fine subangular blocky structure; very friable; common fine roots; few fine and medium manganese concretions; strongly acid; gradual smooth boundary.

Bt1—14 to 28 inches; strong brown (7.5YR 5/6) clay; common medium faint strong brown (7.5YR 4/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; common distinct continuous clay films on faces of peds; few fine and medium manganese concretions; strongly acid; clear smooth boundary.

Bt2—28 to 38 inches; yellowish red (5YR 5/6) clay; common medium distinct red (2.5YR 4/6) and strong brown (7.5YR 5/6) mottles; strong medium subangular blocky structure; firm; common distinct continuous clay films on faces of peds; very strongly acid; clear smooth boundary.

BC—38 to 53 inches; strong brown (7.5YR 5/8) silty clay; common medium distinct yellowish red (5YR 4/6) mottles; weak medium subangular blocky structure; firm; few faint discontinuous clay films on faces of peds; very strongly acid; clear smooth boundary.

C—53 to 60 inches; strong brown (7.5YR 5/6) silty clay; common medium distinct yellowish red (5YR 4/6) mottles; massive; firm; common manganese concentrations; very strongly acid.

Range in Characteristics

Thickness of solum: 40 to 60 inches
Depth to bedrock: More than 60 inches
Content of rock fragments: 0 to 15 percent, by volume, throughout the profile
Reaction: Very strongly acid or strongly acid throughout the profile, except where surface layers have been limed

A horizon:
- Color—hue of 10YR, value of 4, and chroma of 3 or 4
- Texture—silt loam

AB horizon:
- Color—hue of 10YR, value of 4 or 5, and chroma of 4 or 6
- Mottles—few to many in shades of brown or yellow
- Texture—silt loam

Bt horizon:
- Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 4 to 8
- Mottles—few to many in shades of brown, yellow, or red
- Texture—silty clay loam, silty clay, or clay

BC horizon:
- Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 4 to 8
- Mottles—common or many in shades of brown, yellow, red, or gray
- Texture—silty clay loam, silty clay, or clay

C horizon:
- Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 or 6
- Mottles—common or many in shades of brown, red, or gray
- Texture—silty clay or clay

Muskingum Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Residuum weathered from siltstone, shale, or sandstone
Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 25 to 60 percent
Taxonomic class: Fine-loamy, mixed, mesic Typic Dystrochrepts

Typical Pedon

Muskingum channery loam in an area of Muskingum-Chiswell complex, 25 to 60 percent slopes; 4.5 miles north of the intersection of U.S. Highway 441 and State Route 66 on State Route 66, about 6.8 miles west on State Route 338, about 2.1 miles northwest on Jim Fain Road, 0.6 mile north on Ray Gap Road, 0.5 mile west on a dirt road to a radio tower, 300 feet east of the radio tower, on a wooded side slope; USGS Boyds Creek Topographic Quadrangle; lat. 35 degrees 56 minutes 17 seconds N. and long. 83 degrees 42 minutes 07 seconds W.

Oi—1 inch to 0; partially decomposed hardwood leaves, twigs, and roots.
A—0 to 3 inches; brown (10YR 4/3) channery loam; weak fine granular structure; friable; many fine, medium, and coarse roots; 20 percent siltstone and sandstone channers, by volume; strongly acid; clear smooth boundary.
Bw1—3 to 10 inches; brown (7.5YR 4/4) channery loam; weak medium subangular blocky structure; friable; common fine, medium, and coarse roots; 15 percent siltstone and sandstone channers, by volume; strongly acid; clear smooth boundary.
Bw2—10 to 22 inches; brown (7.5YR 5/4) loam; moderate medium subangular blocky structure; friable; few fine, medium, and coarse roots; 10 percent siltstone and sandstone channers, by volume; very strongly acid; clear smooth boundary.
C—22 to 29 inches; brown (7.5YR 5/4) channery loam; massive; friable; 20 percent siltstone and sandstone channers, by volume; very strongly acid; abrupt wavy boundary.
Cr—29 to 40 inches; weathered, fractured fine-grained sandstone.

Range in Characteristics

Thickness of solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Content of rock fragments: 5 to 30 percent, by volume, throughout the profile
Reaction: Very strongly acid to moderately acid throughout the profile

A horizon:
Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—loam in the fine-earth fraction

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6
Texture—loam in the fine-earth fraction

C horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6
Texture—loam in the fine-earth fraction

Cr horizon:
Texture—weathered siltstone, shale, or sandstone

Nonaburg Series

Depth class: Shallow
Drainage class: Well drained
Permeability: Moderately slow
Parent material: Residuum weathered from calcareous shale
Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 5 to 60 percent
Taxonomic class: Clayey, mixed, thermic, shallow Ochreptic Hapludalfs

Typical Pedon

Nonaburg channery silt loam, 25 to 60 percent slopes, severely eroded, rocky; 4.0 miles east of the intersection of U.S. Highway 411 and State Route 66 on U.S. Highway 411, about 0.4 mile north on a gravel road to the City of Sevierville water tank, 800 feet northeast on a side slope; USGS Pigeon Forge Topographic Quadrangle; lat. 35 degrees 52 minutes 23 seconds N. and long. 83 degrees 30 minutes 15 seconds W.

A—0 to 2 inches; brown (10YR 4/3) channery silt loam; weak fine granular structure; friable; many very fine and fine roots in mat at top of the horizon; common very fine and fine continuous tubular pores; 25 percent shale channers, by volume; neutral; abrupt smooth boundary.
BA—2 to 6 inches; strong brown (7.5YR 5/6) channery silt loam; weak medium subangular blocky structure; friable; common very fine and fine roots throughout; common very fine and fine continuous tubular pores; 25 percent shale channers, by volume; neutral; clear smooth boundary.
Bt—6 to 14 inches; strong brown (7.5YR 5/6) channery silty clay; moderate medium subangular blocky structure; friable; common very fine and fine roots; common very fine and fine continuous tubular pores; common faint clay films on faces of peds; 25 percent shale channers, by volume; neutral; clear smooth boundary.
Cr—14 to 41 inches; weathered, fractured calcareous shale; few fine roots in weathered seams.
R—41 inches; hard calcareous shale.

Range in Characteristics

Thickness of solum: 8 to 20 inches
Depth to bedrock: 8 to 20 inches
Content of rock fragments: 15 to 35 percent, by volume, in the A horizon; 10 to 35 percent, by volume, in the Bt horizon
Reaction: Slightly acid or neutral throughout the profile

A horizon:
Color—hue of 7.5YR or 10YR, value of 4, and chroma of 2 to 4
Texture—silt loam in the fine-earth fraction

BA horizon:
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 or 6
Texture—silt loam in the fine-earth fraction

Bt horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6
Mottles—few or common in shades of brown, yellow, or red
Texture—silty clay, clay, or silty clay loam in the fine-earth fraction

Cr horizon:
Texture—weathered calcareous shale

R horizon:
Texture—unweathered calcareous shale

Northcove Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately rapid
Parent material: Colluvium weathered from metasandstone or slate
Landscape: Blue Ridge
Landform: Colluvial fans and coves
Landform position: Footslopes and toeslopes
Slope range: 35 to 50 percent
Taxonomic class: Loamy-skeletal, mixed, mesic Typic Dystrochrepts

Typical Pedon

Northcove stony sandy loam, 35 to 50 percent slopes, bouldery; 4.7 miles south of the intersection of U.S. Highway 441 and State Route 66 on U.S. Highway 442, about 2.8 miles west on State Route 416, about 0.5 mile west on Walden Creek Road, 0.5 mile north on Goose Gap Road, 3.4 miles north on Bluff Mountain Road, 50 feet west of Bluff Mountain Road, in a bank near a sharp curve in the road; USGS Walden Creek Topographic Quadrangle; lat. 35 degrees 47 minutes 59 seconds N. and long. 83 degrees 39 minutes 50 seconds W.

Oi—2 inches to 0; partially decomposed leaves, twigs, and pine needles.
A—0 to 5 inches; dark brown (10YR 3/3) stony sandy loam; weak fine granular structure; very friable; many fine roots; 10 percent gravel, 5 percent cobbles, and 15 percent stones, by volume; very strongly acid; abrupt smooth boundary.
Bw1—5 to 18 inches; dark yellowish brown (10YR 4/4) very cobbly sandy loam; weak fine subangular blocky structure; very friable; many fine and medium and few coarse roots; 25 percent gravel and 15 percent cobbles, by volume; very strongly acid; clear smooth boundary.
Bw2—18 to 40 inches; yellowish brown (10YR 5/4) very cobbly loam; moderate medium subangular blocky structure; friable; many fine and medium roots; 20 percent gravel and 25 percent cobbles, by volume; very strongly acid; gradual smooth boundary.
C—40 to 72 inches; yellowish brown (10YR 5/4) extremely cobbly sandy loam; weak fine subangular blocky structure; very friable; 20 percent gravel and 45 percent cobbles, by volume; very strongly acid.

Range in Characteristics

Thickness of solum: 35 to more than 60 inches
Depth to bedrock: More than 60 inches
Content of rock fragments: 15 to 60 percent, by volume, in the A horizon; 35 to 60 percent, by volume, in the Bw horizon; 35 to 80 percent, by volume, in the C horizon
Reaction: Extremely acid to moderately acid throughout the profile

A horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4; value of 3 is limited to thin upper A horizons; soil materials in this horizon have value of 4 or more when mixed to a depth of 7 inches
Texture—sandy loam in the fine-earth fraction

BA horizon (if it occurs):
Color—hue of 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—sandy loam, fine sandy loam, or loam in the fine-earth fraction

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8
Texture—sandy loam, loam, or fine sandy loam in the fine-earth fraction

C horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8
Texture—sandy loam, fine sandy loam, or loamy sand in the fine-earth fraction

Pope Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate or moderately rapid

Parent material: Alluvium
Landscape: Ridges and Valleys
Landform: Narrow flood plains
Landform position: Linear to slightly convex slopes
Slope range: 0 to 3 percent
Taxonomic class: Coarse-loamy, mixed, mesic Fluventic Dystrochrepts

Typical Pedon

Pope sandy loam, occasionally flooded; 4.3 miles east on U.S. Highway 411 from the intersection of U.S. Highway 411 and State Route 66, about 7.5 miles southeast on State Route 339, about 0.5 mile north on Obes Branch Road to a road bank; USGS Richardson Cove Topographic Quadrangle; lat. 35 degrees 51 minutes 48 seconds N. and long. 83 degrees 23 minutes 52 seconds W.

Ap—0 to 4 inches; brown (10YR 4/3) sandy loam; moderate fine granular structure; very friable; many fine, medium, and coarse roots; many fine continuous tubular pores; strongly acid; clear smooth boundary.
Bw1—4 to 7 inches; dark yellowish brown (10YR 4/4) sandy loam; weak fine and medium subangular blocky structure; very friable; many fine, medium, and coarse roots; common fine continuous tubular pores; strongly acid; abrupt smooth boundary.
Bw2—7 to 18 inches; dark yellowish brown (10YR 4/4) sandy loam; weak medium subangular blocky structure; very friable; common fine, medium, and coarse roots; common fine continuous tubular pores; 2 percent sandstone gravel, by volume; strongly acid; abrupt smooth boundary.
Bw3—18 to 24 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; very friable; few fine, medium, and coarse roots; common fine continuous tubular pores; 2 percent sandstone gravel, by volume; strongly acid; clear smooth boundary.
Bw4—24 to 32 inches; strong brown (7.5YR 5/6) cobbly sandy loam; weak medium subangular blocky structure; very friable; few fine, medium, and coarse roots; common fine continuous tubular pores; 10 percent gravel and 10 percent cobbles, by volume; very strongly acid; abrupt smooth boundary.
C—32 to 60 inches; yellowish brown (10YR 5/6) cobbly loamy sand; massive; very friable; common fine and medium and few coarse continuous tubular pores; 10 percent gravel and 20 percent cobbles, by volume; very strongly acid.

Range in Characteristics

Thickness of solum: 30 to 50 inches
Depth to bedrock: More than 60 inches
Content of rock fragments: 0 to 30 percent, by volume, throughout the profile
Reaction: Extremely acid to strongly acid throughout the profile

A horizon:
Color—hue of 10YR, value of 4, and chroma of 3 or 4
Texture—sandy loam

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6
Texture—sandy loam or fine sandy loam in the fine-earth fraction

C horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6
Texture—loamy sand, sandy loam, or loam in the fine-earth fraction

Rosman Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately rapid
Parent material: Loamy alluvium washed from materials weathered from quartzite, metasandstone, or phyllite
Landscape: Blue Ridge
Landform: Flood plains
Landform position: Linear to slightly convex slopes
Slope range: 0 to 2 percent
Taxonomic class: Coarse-loamy, mixed, mesic Fluventic Haplumbrepts

Typical Pedon

Rosman sandy loam, occasionally flooded; 3.4 miles east on U.S. Highway 411 from the intersection of U.S. Highway 411 and State Route 66, about 8.7 miles south on State Route 416, about 0.3 mile east across the bridge along the Little Pigeon River, 85 feet north of a hickory tree on the bank of the Little Pigeon River, in a field; USGS Richardson Cove Topographic Quadrangle; lat. 35 degrees 47 minutes 47 seconds N. and long. 83 degrees 25 minutes 32 seconds W.

Ap—0 to 10 inches; dark brown (10YR 3/3) sandy loam; weak fine granular structure; very friable; common fine roots; few coarse and common medium continuous tubular pores; strongly acid; abrupt smooth boundary.
A—10 to 19 inches; dark brown (10YR 3/3) sandy

loam; weak medium granular structure; very friable; common fine and few coarse roots; many fine and common medium continuous tubular pores; slightly acid; clear smooth boundary.

Bw1—19 to 38 inches; dark yellowish brown (10YR 4/4) sandy loam; weak medium subangular blocky structure; very friable; common fine and few coarse roots; many fine and common medium continuous tubular pores; 2 percent, by volume, gravel and cobbles of sandstone as much as 4 inches across; slightly acid; clear smooth boundary.

Bw2—38 to 49 inches; brown (10YR 4/3) sandy loam; weak medium subangular blocky structure; very friable; common fine roots; common fine and few medium continuous tubular pores; 2 percent, by volume, gravel and cobbles of sandstone as much as 4 inches across; slightly acid; clear smooth boundary.

C—49 to 64 inches; dark yellowish brown (10YR 4/4) loamy sand; massive; very friable; few fine roots; few coarse and common fine and medium continuous tubular pores; 2 percent, by volume, gravel and cobbles of sandstone as much as 4 inches across; strongly acid.

Range in Characteristics

Thickness of solum: 35 to 60 inches or more
Depth to bedrock: More than 60 inches
Content of rock fragments: 0 to 10 percent, by volume, in the upper part of the solum; 0 to 35 percent, by volume, below a depth of 50 inches
Reaction: Strongly acid to slightly acid throughout the profile

Ap or A horizon:
Color—hue of 10YR and value and chroma of 2 or 3
Texture—sandy loam

Bw horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—sandy loam or loam

C horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—sandy loam, loam, loamy sand, or sand in the fine-earth fraction

Sequatchie Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Loamy alluvium
Landscape: Ridges and Valleys
Landform: Low stream terraces
Landform position: Linear slopes
Slope range: 0 to 3 percent
Taxonomic class: Fine-loamy, siliceous, thermic Humic Hapludults

Typical Pedon

Sequatchie loam, rarely flooded; 4.5 miles north of the intersection of State Road 66 and U.S. Highway 411 on State Road 66, about 3.5 miles west on State Road 338, north on a gravel road to Trundle farm, 0.8 mile north along a fence row, about 50 feet into a field near the French Broad River; USGS Boyds Creek Topographic Quadrangle; lat. 35 degrees 55 minutes 21 seconds N. and long. 83 degrees 37 minutes 52 seconds W.

Ap—0 to 10 inches; dark brown (7.5YR 3/4) loam; moderate medium and fine granular structure; friable; common fine roots; many fine continuous tubular pores; neutral; abrupt smooth boundary.

BA—10 to 17 inches; brown (7.5YR 4/4) loam; common medium distinct dark brown (10YR 3/3) mottles in the interiors of peds; weak medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; strongly acid; clear smooth boundary.

Bt1—17 to 33 inches; strong brown (7.5YR 5/6) clay loam; common medium distinct brown (7.5YR 4/4) mottles on faces of peds; moderate medium subangular blocky structure; friable; few fine roots; common fine and few medium continuous tubular pores; few faint discontinuous clay films on faces of peds; common fine iron and manganese concentrations; very strongly acid; clear smooth boundary.

Bt2—33 to 44 inches; strong brown (7.5YR 5/6) loam; common medium distinct brown (7.5YR 4/4) mottles on faces of peds; moderate medium subangular blocky structure; friable; few fine roots; common fine and few medium continuous tubular pores; few faint discontinuous clay films on faces of peds; 5 percent rock fragments, by volume; very strongly acid; clear smooth boundary.

BC—44 to 51 inches; strong brown (7.5YR 5/6) loam; common fine distinct brown (7.5YR 4/4) mottles; moderate medium subangular blocky structure; friable; few fine tubular pores; 5 percent rock fragments, by volume; common medium and fine soft iron and manganese concentrations; very strongly acid; clear smooth boundary.

C—51 to 62 inches; strong brown (7.5YR 5/6) sandy

loam; few fine distinct brown (7.5YR 4/4) mottles; massive; very friable; 5 percent rock fragments, by volume; common fine and medium iron and manganese concentrations; very strongly acid.

Range in Characteristics

Thickness of solum: 32 to 55 inches
Depth to bedrock: More than 60 inches
Content of rock fragments: 0 to 15 percent, by volume, in the A and B horizons; 5 to 30 percent, by volume, in the C horizon
Reaction: Very strongly acid or strongly acid throughout the profile, except where surface layers have been limed

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 3, and chroma of 2 to 4
Texture—loam

BA horizon:
Color—hue of 7.5YR or 10YR, value of 4, and chroma of 3 to 6
Texture—loam, silt loam, or fine sandy loam

Bt horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 8
Mottles—common in shades of brown
Texture—clay loam or loam

BC horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 8
Mottles—common in shades of brown or yellow
Texture—loam, clay loam, fine sandy loam, or sandy loam

C horizon:
Color—hue of 7.5YR or 10YR, value of 5, and chroma of 4 or 6
Mottles—common in shades of brown or yellow
Texture—loam, fine sandy loam, or sandy loam

Shelocta Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Loamy colluvium weathered from sandstone or shale
Landscape: Ridges and Valleys
Landform: Colluvial fans and coves
Landform position: Footslopes and toeslopes
Slope range: 2 to 15 percent
Taxonomic class: Fine-loamy, mixed, mesic Typic Hapludults

Typical Pedon

Shelocta silt loam, 5 to 15 percent slopes; 400 feet north on Birds Creek Road from the intersection of Shady Grove Road and Birds Creek Road, 200 feet west in a field; USGS Richardson Cove Topographic Quadrangle; lat. 35 degrees 47 minutes 08 seconds N. and long. 83 degrees 27 minutes 08 seconds W.

Ap—0 to 10 inches; brown (7.5YR 4/4) silt loam; moderate medium granular structure; friable; common fine roots; common fine continuous tubular pores; 10 percent siltstone and shale channers, by volume; slightly acid; clear smooth boundary.
Bt1—10 to 17 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; few faint clay films on faces of peds; common manganese stains on faces of peds; 10 percent siltstone and shale channers, by volume; strongly acid; clear smooth boundary.
Bt2—17 to 31 inches; strong brown (7.5YR 5/6) channery silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; common faint discontinuous clay films on faces of peds; common manganese stains on faces of peds; 20 percent siltstone and shale channers, by volume; strongly acid; clear smooth boundary.
Bt3—31 to 48 inches; strong brown (7.5YR 5/6) channery silty clay loam; moderate medium subangular blocky structure; friable; common fine continuous tubular pores; few distinct discontinuous clay films on faces of peds; few manganese stains on faces of peds; 20 percent siltstone and shale channers, by volume; strongly acid; clear smooth boundary.
BC—48 to 60 inches; strong brown (7.5YR 5/8) channery silt loam; few medium prominent pale red (2.5YR 7/2) mottles; weak medium subangular blocky structure; friable; few fine continuous tubular pores; 15 percent siltstone and shale channers, by volume; very strongly acid.

Range in Characteristics

Thickness of solum: 40 to 60 inches or more
Depth to bedrock: More than 48 inches
Content of rock fragments: 5 to 35 percent, by volume, throughout the profile
Reaction: Very strongly acid or strongly acid

throughout the profile, except where surface layers have been limed

Ap or A horizon:
Color—hue of 7.5YR or 10YR, value of 4, and chroma of 3 or 4
Texture—silt loam

Bt horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 6 or 8
Texture—silty clay loam in the fine-earth fraction

BC horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 8
Mottles—few to many in shades of brown or yellow
Texture—silt loam, loam, or clay loam in the fine-earth fraction

Soco Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately rapid
Parent material: Residuum weathered from slate, phyllite, or metasandstone
Landscape: Blue Ridge
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 12 to 80 percent
Taxonomic class: Coarse-loamy, mixed, mesic Typic Dystrochrepts

Typical Pedon

Soco loam, 12 to 25 percent slopes; 10.7 miles south of the intersection of U.S. Highway 441 and State Route 66 on U.S. Highway 441, about 5.1 miles southwest on Norton Creek Road to a homestead, 0.4 mile west on an unimproved road to a road bank at the end of a ridge; USGS Gatlinburg Topographic Quadrangle; lat. 35 degrees 42 minutes 51 seconds N. and long. 83 degrees 34 minutes 45 seconds W.

Oi—1 inch to 0; partially decomposed leaves, twigs, and roots.
A—0 to 2 inches; very dark grayish brown (10YR 3/2) loam; moderate fine granular structure; very friable; common fine and medium roots; 2 percent metasandstone gravel, by volume; very strongly acid; clear smooth boundary.
Bw1—2 to 8 inches; yellowish brown (10YR 5/6) loam; weak medium subangular blocky structure; friable; common fine and medium roots; 2 percent metasandstone gravel, by volume; very strongly acid; clear smooth boundary.
Bw2—8 to 15 inches; brownish yellow (10YR 6/8) loam; moderate medium subangular blocky structure; friable; common fine and medium roots; 2 percent metasandstone gravel, by volume; very strongly acid; clear smooth boundary.
Bw3—15 to 21 inches; strong brown (7.5YR 5/8) loam; moderate medium subangular blocky structure; friable; few fine and medium roots; 2 percent metasandstone gravel, by volume; very strongly acid; clear smooth boundary.
BC—21 to 29 inches; strong brown (7.5YR 5/8) loam; common medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; few fine roots; 2 percent metasandstone gravel, by volume; very strongly acid; clear smooth boundary.
C—29 to 34 inches; strong brown (7.5YR 5/8) loam; common medium distinct brownish yellow (10YR 6/8) mottles; massive; friable; 5 percent metasandstone gravel, by volume; very strongly acid; abrupt smooth boundary.
Cr—34 to 50 inches; weathered metasandstone.

Range in Characteristics

Thickness of solum: 15 to 39 inches or more
Depth to bedrock: 20 to 40 inches
Content of rock fragments: 0 to 35 percent, by volume, throughout the profile
Reaction: Extremely acid to strongly acid throughout the profile

A horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4; value of 3 is limited to thin upper A horizons; soil materials in this horizon have value of 4 or more when mixed to a depth of 7 inches
Texture—loam

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8
Texture—loam, sandy loam, or fine sandy loam in the fine-earth fraction

BC horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8
Mottles—few or common in shades of brown or yellow
Texture—loam, sandy loam, or fine sandy loam in the fine-earth fraction

C horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8
Mottles—few or common in shades of brown or yellow
Texture—loam, sandy loam, or loamy sand in the fine-earth fraction

Cr horizon:
Texture—weathered slate, phyllite, or metasandstone

Staser Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate or moderately rapid
Parent material: Alluvium washed from materials weathered from mixed sedimentary and metamorphic rocks
Landscape: Ridges and Valleys
Landform: Flood plains
Landform position: Linear slopes
Slope range: 0 to 2 percent
Taxonomic class: Fine-loamy, mixed, thermic Cumulic Hapludolls

Typical Pedon

Staser loam, occasionally flooded; 1.4 miles south of the intersection of U.S Highways 411 and 441 on U.S. Highway 441, about 75 feet south on Buena Drive, 0.3 mile east on a field road to a tool shed, 0.3 mile north of the tool shed, 100 feet west of the Little Pigeon River; USGS Pigeon Forge Topographic Quadrangle; lat. 35 degrees 51 minutes 11 seconds N. and long. 83 degrees 33 minutes 47 seconds W.

Ap—0 to 11 inches; dark brown (10YR 3/3) loam; weak medium granular structure; very friable; common fine roots; few coarse and common medium continuous tubular pores; moderately acid; abrupt smooth boundary.
A1—11 to 19 inches; very dark grayish brown (10YR 3/2) loam; weak medium subangular blocky structure; friable; common fine roots; many fine and common medium continuous tubular pores; moderately acid; clear smooth boundary.
A2—19 to 36 inches; dark brown (10YR 3/3) loam; weak medium subangular blocky structure; friable; few fine foots; many fine and common medium continuous tubular pores; moderately acid; abrupt smooth boundary.
Bw—36 to 46 inches; brown (10YR 4/3) loam; few fine distinct pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; friable; few fine roots; common fine and few medium continuous tubular pores; few fine particles of charcoal; moderately acid; clear smooth boundary.
BC—46 to 60 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine subangular blocky structure; friable; few coarse and common fine and medium continuous tubular pores; few fine particles of charcoal; moderately acid; clear smooth boundary.
C—60 to 72 inches; dark yellowish brown (10YR 4/4) fine sandy loam; massive; very friable; common fine and medium and few coarse continuous tubular pores; moderately acid.

Range in Characteristics

Thickness of solum: More than 60 inches
Depth to bedrock: More than 60 inches
Thickness of mollic epipedon: 24 to 45 inches
Content of rock fragments: 0 to 15 percent, by volume, throughout the profile
Reaction: Moderately acid to neutral throughout the profile

Ap or A horizon:
Color—hue of 10YR and value and chroma of 2 or 3
Texture—loam

Bw horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 3 or 4
Mottles—few or common in shades of brown or yellow
Texture—loam, sandy loam, or fine sandy loam in the fine-earth fraction

BC horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 3 or 4
Texture—fine sandy loam or loam

C horizon:
Color—hue of 10YR and value and chroma of 3 or 4
Texture—fine sandy loam or loam

Steadman Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Parent material: Alluvium washed from materials weathered from mixed sedimentary and metamorphic rocks
Landscape: Ridges and Valleys
Landform: Flood plains and drainageways

Landform position: Linear or slightly concave slopes
Slope range: 0 to 3 percent
Taxonomic class: Fine-silty, mixed, thermic Fluvaquentic Eutrochrepts

Typical Pedon

Steadman silt loam, occasionally flooded; from the intersection of U.S. Highway 441 and State Route 66, about 12.6 miles northwest on U.S. Highway 441, about 3.9 miles northeast on State Route 338, about 0.5 mile southeast on Gibson Circle, 0.3 mile south on Matthew Lane, 200 feet east of Matthew Lane in a field, 60 feet north of Boyds Creek; USGS Boyds Creek Topographic Quadrangle; lat. 35 degrees 53 minutes 49 seconds N. and long. 83 degrees 41 minutes 33 seconds W.

Ap—0 to 9 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium granular structure; friable; few fine roots; few fine pores; slightly acid; clear smooth boundary.
Bw1—9 to 16 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; few fine roots; common fine pores; moderately acid; clear smooth boundary.
Bw2—16 to 20 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; few fine roots; common fine pores; common fine distinct yellowish brown (10YR 5/8) irregularly shaped masses of iron concentration in the matrix; moderately acid; clear smooth boundary.
Bw3—20 to 35 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; few fine roots; common fine distinct light brownish gray (10YR 6/2) irregularly shaped masses of iron depletion and few fine distinct yellowish brown (10YR 5/6) irregularly shaped masses of iron concentration in the matrix; common brown and black iron and manganese stains and concretions; moderately acid; abrupt smooth boundary.
C—35 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; many fine distinct light brownish gray (10YR 6/2) irregularly shaped masses of iron depletion and common fine distinct yellowish brown (10YR 5/6) irregularly shaped masses of iron concentration in the matrix; common brown and black iron and manganese stains; moderately acid.

Range in Characteristics

Thickness of solum: 35 to more than 60 inches
Depth to bedrock: More than 60 inches
Content of rock fragments: 0 to 5 percent, by volume, in the Ap and Bw horizons; 0 to 35 percent, by volume, in the C horizon
Reaction: Moderately acid to slightly alkaline throughout the profile

Ap horizon:
Color—hue of 10YR, value of 4, and chroma of 3 or 4
Texture—silt loam

Bw horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 4 or 6
Texture—silt loam or loam
Redoximorphic features—none to common masses of iron concentration in shades of brown; common or many masses of iron depletion in shades of gray in the lower part of the horizon

C horizon:
Color—hue of 10YR, value of 5 or 6, and chroma of 3 to 6
Texture—silt loam or loam
Redoximorphic features—none to common masses of iron concentration in shades of brown; common or many masses of iron depletion in shades of gray

Sylco Series

Depth class: Moderately deep
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Parent material: Residuum weathered from metasiltstone, slate, or phyllite
Landscape: Blue Ridge
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 25 to 80 percent
Taxonomic class: Loamy-skeletal, mixed, mesic Typic Dystrochrepts

Typical Pedon

Sylco channery silt loam in an area of Cataska-Sylco complex, 25 to 80 percent slopes; 13.2 miles south of the intersection of U.S. Highway 441 and State Route 66 on U.S. Highway 441, about 4.3 miles east on U.S. Highway 321, about 0.2 mile north on Hidden Hill Road, 100 feet northeast of the parking lot of Gatlinburg Community Center; USGS Mount LeConte Topographic Quadrangle; lat. 35 degrees 44 minutes 05 seconds N. and long. 83 degrees 26 minutes 45 seconds W.

Oi—1 inch to 0; partially decomposed leaf litter.
A—0 to 2 inches; yellowish brown (10YR 5/4) channery silt loam; moderate medium granular structure; friable; common fine roots; 20 percent siltstone channers, by volume; very strongly acid; clear smooth boundary.
Bw1—2 to 9 inches; strong brown (7.5YR 5/8) very channery silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; 40 percent siltstone channers, by volume; very strongly acid; clear smooth boundary.
Bw2—9 to 25 inches; strong brown (7.5YR 5/8) very channery silt loam; moderate medium subangular blocky structure; friable; few fine and medium roots; 45 percent siltstone channers, by volume; very strongly acid; abrupt wavy boundary.
Cr—25 to 33 inches; weathered, fractured siltstone.
R—33 inches; unweathered metasiltstone.

Range in Characteristics

Thickness of solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Content of rock fragments: 10 to 20 percent, by volume, in the A horizon; 15 to 50 percent, by volume, in the B horizon
Reaction: Extremely acid to strongly acid throughout the profile

A horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 3 or 4; value of 3 is limited to thin upper A horizons; soil materials in this horizon have value of 4 or more when mixed to a depth of 7 inches
Texture—silt loam in the fine-earth fraction

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 8
Texture—silt loam or loam in the fine-earth fraction

Cr horizon:
Texture—weathered metasiltstone, slate, or phyllite

R horizon:
Texture—unweathered metasiltstone, slate, or phyllite

Talbott Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately slow
Parent material: Residuum weathered from limestone
Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 10 to 60 percent
Taxonomic class: Fine, mixed, thermic Typic Hapludalfs

Typical Pedon

Talbott silty clay loam in an area of Talbott-Rock outcrop complex, 10 to 25 percent slopes, eroded; 6.7 miles north of the intersection of U.S. Highway 441 and State Route 66 on U.S. Highway 441, about 0.2 mile east on State Route 139, about 0.8 mile north on Bryan Road, 2,000 feet northeast in a pasture; USGS Douglas Dam Topographic Quadrangle; lat. 35 degrees 58 minutes 10 seconds N. and long. 83 degrees 35 minutes 29 seconds W.

Ap—0 to 6 inches; brown (10YR 4/3) silty clay loam; moderate medium granular structure; friable; common fine roots; slightly acid; clear smooth boundary.
Bt1—6 to 22 inches; yellowish red (5YR 4/6) clay; moderate medium subangular blocky structure; friable; common fine roots; few faint discontinuous clay films on faces of peds; slightly acid; clear smooth boundary.
Bt2—22 to 32 inches; yellowish red (5YR 4/6) clay; common medium distinct brown (7.5YR 4/4) mottles; strong medium subangular blocky structure; friable; few fine roots; common distinct discontinuous clay films on faces of peds; slightly acid; abrupt smooth boundary.
R—32 inches; unweathered limestone.

Range in Characteristics

Thickness of solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Content of rock fragments: 0 to 10 percent, by volume, throughout the profile
Reaction: Strongly acid to slightly acid throughout the profile

Ap or A horizon:
Color—hue of 10YR, value of 3 or 4, and chroma of 2 to 4
Texture—silty clay loam

Bt horizon:
Color—hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 4 to 8
Mottles—few or common in shades of brown or yellow
Texture—clay or silty clay

R horizon:
Texture—unweathered limestone

Townley Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Slow
Parent material: Residuum weathered from shale or siltstone
Landscape: Ridges and Valleys
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 2 to 60 percent
Taxonomic class: Clayey, mixed, thermic Typic Hapludults

Typical Pedon

Townley silt loam, 2 to 5 percent slopes, eroded (fig. 10); 14.7 miles northwest of the intersection of U.S. Highway 441 and State Route 66 on U.S. Highway 441, about 1.0 mile east on Old Sevierville Pike to Seymour Community Church, 100 feet behind Seymour Community Church in a cut bank; USGS Shooks Gap Topographic Quadrangle; lat. 35 degrees 53 minutes 45 seconds N. and long. 83 degrees 46 minutes 23 seconds W.

Ap—0 to 5 inches; brown (10YR 4/3) silt loam; moderate fine and medium granular structure; very friable; common fine and few medium and coarse roots; common fine and few medium continuous tubular pores; 5 percent shale channers, by volume; moderately acid; abrupt smooth boundary.
Bt1—5 to 18 inches; strong brown (7.5YR 5/6) clay; few fine prominent yellowish brown (10YR 5/8) mottles; moderate fine and medium subangular blocky structure; firm; few fine roots; common fine and medium continuous tubular pores; common patchy faint clay films on faces of peds; 5 percent shale channers, by volume; very strongly acid; clear smooth boundary.
Bt2—18 to 30 inches; yellowish red (5YR 5/6) clay; common fine prominent yellowish brown (10YR 5/8) mottles; moderate medium subangular blocky structure; firm; few fine and medium roots; common fine and medium continuous tubular pores; common patchy faint clay films on faces of peds; 10 percent shale channers, by volume; very strongly acid; clear wavy boundary.
Cr—30 to 50 inches; weathered, fractured shale.

Range in Characteristics

Thickness of solum: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Content of rock fragments: 5 to 10 percent, by volume, in the Ap horizon; 5 to 20 percent, by volume, in the Bt horizon
Reaction: Extremely acid to strongly acid throughout the profile, except where surface layers have been limed

Ap horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6
Texture—silt loam

Bt horizon:
Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 6 or 8
Mottles—few or common in shades of brown, yellow, or red
Texture—clay, silty clay, or silty clay loam

Cr horizon:
Texture—weathered shale or siltstone

Unicoi Series

Depth class: Shallow
Drainage class: Excessively drained
Permeability: Moderately rapid
Parent material: Residuum weathered from arkose, arkosic metasandstone, or quartzite
Landscape: Blue Ridge
Landform: Ridges
Landform position: Summits and side slopes
Slope range: 30 to 80 percent
Taxonomic class: Loamy-skeletal, mixed, mesic Lithic Dystrochrepts

Typical Pedon

Unicoi gravelly sandy loam in an area of Unicoi-Rock outcrop complex, 30 to 80 percent slopes; 4.7 miles south of the intersection of U.S. Highway 441 and State Route 66 on U.S. Highway 441, about 2.8 miles southwest on U.S. Highway 321, about 0.5 mile west on Walden Creek Road, 0.5 mile north on Goose Gap Road, 4.7 miles northwest on Bluff Mountain Road, 50 feet northwest of the intersection of Bluff Mountain Road and Dupont Springs Road, on a side slope; USGS Walden Creek Topographic Quadrangle; lat. 35 degrees 48 minutes 24 seconds N. and long. 83 degrees 39 minutes 28 seconds W.

Oi—2 inches to 0; partially decomposed leaves, twigs, and roots.

A—0 to 2 inches; very dark grayish brown (10YR 3/2) gravelly sandy loam; weak fine granular structure; very friable; many fine, medium, and coarse roots; 25 percent sandstone gravel, by volume; extremely acid; clear smooth boundary.
Bw1—2 to 6 inches; yellowish brown (10YR 5/4) very gravelly sandy loam; weak fine subangular blocky structure; friable; many fine, medium, and coarse roots; 40 percent sandstone gravel and cobbles, by volume; very strongly acid; clear smooth boundary.
Bw2—6 to 12 inches; yellowish brown (10YR 5/4) very gravelly sandy loam; weak medium subangular blocky structure; friable; 50 percent sandstone gravel and cobbles, by volume; very strongly acid; abrupt wavy boundary.
R—12 inches; unweathered metasandstone.

Range in Characteristics

Thickness of solum: 11 to 20 inches
Depth to bedrock: 7 to 20 inches to hard bedrock
Content of rock fragments: 35 to 60 percent, by volume, throughout the profile
Reaction: Extremely acid to strongly acid throughout the profile

A horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 2 to 4
Texture—sandy loam in the fine-earth fraction

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6
Texture—sandy loam, loam, or fine sandy loam in the fine-earth fraction

R horizon:
Texture—unweathered arkose, arkosic metasandstone, or quartzite

Waynesboro Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Parent material: Old alluvium
Landscape: Ridges and Valleys
Landform: High stream terraces
Landform position: Summits and side slopes
Slope range: 2 to 25 percent
Taxonomic class: Clayey, kaolinitic, thermic Typic Paleudults

Typical Pedon

Waynesboro loam, 5 to 12 percent slopes, eroded; 3.4 miles east on U.S. Highway 411 from the intersection of U.S Highway 411 and State Route 66, about 0.8 mile south on State Route 416, about 0.4 mile east on Old Newport Highway, 0.1 mile south on Harrisburg Mill Road to a road bank; USGS Richardson Cove Topographic Quadrangle; lat. 35 degrees 51 minutes 43 seconds N. and long. 83 degrees 29 minutes 36 seconds W.

Ap—0 to 9 inches; brown (10YR 4/3) loam; common fine distinct red (2.5YR 4/6) mottles below a depth of 4 inches; weak medium granular structure; friable; many fine roots; common fine continuous tubular pores; 5 percent rounded graywacke and phyllite gravel, by volume; strongly acid; abrupt wavy boundary.
Bt1—9 to 20 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; common faint discontinuous clay films on faces of peds; 5 percent rounded graywacke and phyllite gravel, by volume; strongly acid; gradual smooth boundary.
Bt2—20 to 39 inches; dark red (2.5YR 3/6) clay; moderate medium subangular blocky structure; friable; few fine roots; common fine continuous tubular pores; many distinct continuous clay films on faces of peds; 5 percent rounded graywacke and phyllite gravel, by volume; very strongly acid; clear smooth boundary.
Bt3—39 to 56 inches; dark red (2.5YR 3/6) clay; moderate medium angular blocky structure; friable; few fine roots; few fine continuous tubular pores; many distinct continuous clay films on faces of peds; 10 percent rounded graywacke and phyllite gravel, by volume; very strongly acid; clear smooth boundary.
Bt4—56 to 72 inches; dark red (2.5YR 3/6) clay; moderate medium angular blocky structure; firm; few fine roots; common fine continuous tubular pores; common faint continuous clay films on faces of peds; 10 percent rounded graywacke and phyllite gravel, by volume; very strongly acid.

Range in Characteristics

Thickness of solum: More than 60 inches
Depth to bedrock: More than 60 inches
Content of rock fragments: 0 to 15 percent, by volume, throughout the profile
Reaction: Very strongly acid or strongly acid

throughout the profile, except where surface layers have been limed

Ap horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4
Texture—loam

Bt horizon:
Color—hue of 2.5YR or 5YR, value of 3 to 5, and chroma of 6 or 8
Mottles—none to common in shades of brown, yellow, or red in the lower part of the horizon
Texture—clay loam or clay

Whitesburg Series

Depth class: Deep
Drainage class: Moderately well drained
Permeability: Moderate
Parent material: Local alluvium washed from materials weathered from shale
Landscape: Ridges and Valleys
Landform: Drainageways
Landform position: Linear slopes
Slope range: 1 to 5 percent
Taxonomic class: Fine-loamy, siliceous, mesic Aquic Dystric Eutrochrepts

Typical Pedon

Whitesburg silt loam, occasionally flooded; 0.5 mile north of the intersection of U.S. Highway 441 and State Route 66 on State Route 66, about 0.5 mile north on State Route 139 to Denton's driveway, 500 feet northeast of a homestead, in a drainageway; USGS Douglas Dam Topographic Quadrangle; lat. 35 degrees 53 minutes 31 seconds N. and long. 83 degrees 34 minutes 34 seconds W.

Ap—0 to 4 inches; brown (10YR 4/3) silt loam; moderate fine granular structure; friable; many fine roots; few fine continuous tubular pores; 2 percent shale channers, by volume; neutral; clear smooth boundary.
Bw1—4 to 12 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; common fine roots; common very fine and few fine and medium continuous tubular pores; 5 percent shale channers; mildly alkaline; clear smooth boundary.
Bw2—12 to 18 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; few fine roots; common very fine and fine and few medium continuous tubular pores; few fine distinct yellowish brown (10YR 5/6) irregularly shaped masses of iron accumulation in the matrix; 5 percent shale channers, by volume; mildly alkaline; abrupt smooth boundary.
Bw3—18 to 25 inches; yellowish brown (10YR 5/6) silty clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine and medium continuous tubular pores; common fine distinct pale brown (10YR 6/3) and common medium distinct strong brown (7.5YR 5/8) irregularly shaped masses of iron concentration in the matrix; 10 percent shale channers, by volume; mildly alkaline; clear smooth boundary.
C1—25 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; massive; firm; few fine and medium continuous tubular pores; common fine distinct light brownish gray (10YR 6/2) irregularly shaped masses of iron depletion and yellowish brown (10YR 5/6) irregularly shaped masses of iron concentration in the matrix; 10 percent shale channers, by volume; mildly alkaline; clear smooth boundary.
C2—34 to 53 inches; yellowish brown (10YR 5/4) silty clay loam; massive; firm; few fine and medium continuous tubular pores; common fine distinct light brownish gray (10YR 6/2) irregularly shaped masses of iron depletion and few fine distinct yellowish brown (10YR 5/6) irregularly shaped masses of iron concentration in the matrix; 10 percent shale channers, by volume; moderately alkaline; clear smooth boundary.
Cr—53 to 60 inches; weathered calcareous shale.

Range in Characteristics

Thickness of solum: 20 to 50 inches
Depth to bedrock: 40 to 60 inches
Content of rock fragments: 0 to 10 percent, by volume, throughout the profile
Reaction: Slightly acid to moderately alkaline throughout the profile

Ap horizon:
Color—hue of 10YR, value of 4, and chroma of 3 or 4
Texture—silt loam

Bw horizon:
Color—hue of 10YR, value of 4 or 5, and chroma of 4 or 6
Texture—silt loam or silty clay loam
Redoximorphic features—none to common masses of iron concentration in shades of

brown; none to common masses of iron depletion in shades of gray

C horizon:

Color—hue of 10YR, value of 4 or 5, and chroma of 3 or 4

Texture—silt loam or silty clay loam

Redoximorphic features—few or common masses of iron concentration in shades of brown; common or many masses of iron depletion in shades of gray

Cr horizon:

Texture—weathered calcareous shale

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Glossary

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 40-inch profile or to a limiting layer is expressed as:

Very low	0 to 2
Low	2 to 4
Moderate	4 to 6
High	more than 6

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Channery soil material. Soil material that is, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the

surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that is 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep soils, 20 to 40 inches; shallow soils, 10 to 20 inches; and very shallow soils, less than 10 inches.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven

classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Flaggy soil material. Material that is, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Footslope. The inclined surface at the base of a hill.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated

except by blasting or by the use of special equipment that is not commonly used in construction.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.
Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.
Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.
Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.
Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential for crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse-grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4

Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments ranging from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic

criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slippage (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 2 percent
Gently sloping	2 to 5 percent
Strongly sloping	5 to 12 percent
Moderately steep	12 to 25 percent
Steep	25 to 60 percent
Very steep	60 percent and higher

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight

angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The outermost inclined surface at the base of a hill; part of a footslope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse-grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.—Temperature and Precipitation

(Recorded in the period 1971-2000 at Gatlinburg, Tennessee)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January--	47.8	25.1	36.4	72	-3	86	4.91	3.14	6.76	9	3.5
February-	52.0	26.8	39.4	76	2	115	4.25	2.67	5.86	8	1.5
March----	60.9	33.3	47.1	83	11	264	5.56	3.44	7.42	9	2.2
April----	69.6	40.1	54.9	88	23	447	4.36	2.83	5.92	8	0.7
May------	76.0	48.8	62.4	88	32	688	5.57	3.94	7.12	10	0.0
June-----	82.1	57.2	69.6	91	42	879	5.82	3.43	8.10	9	0.0
July-----	84.7	61.7	73.2	94	51	1,022	6.07	3.78	8.03	10	0.0
August---	83.6	60.4	72.0	93	49	985	4.55	2.73	6.42	8	0.0
September	78.6	54.5	66.6	91	38	796	4.63	2.93	6.27	7	0.0
October--	69.4	41.5	55.5	84	25	474	2.98	1.36	4.60	5	0.0
November-	60.3	33.6	47.0	79	17	242	4.02	2.75	5.22	7	0.1
December-	51.0	27.4	39.2	74	6	117	4.44	2.53	6.24	8	1.2
Yearly:											
Average-	68.0	42.6	55.3	---	---	---	---	---	---	---	---
Extreme-	98	-18	---	95	-5	---	---	---	---	---	---
Total---	---	---	---	---	---	6,115	57.15	48.03	64.74	98	9.3

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.—Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Gatlinburg, Tennessee)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 15	Apr. 22	May 10
2 years in 10 later than--	Apr. 8	Apr. 17	May 5
5 years in 10 later than--	Mar. 27	Apr. 9	Apr. 25
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 30	Oct. 9	Oct. 3
2 years in 10 earlier than--	Nov. 3	Oct. 15	Oct. 8
5 years in 10 earlier than--	Nov. 12	Oct. 26	Oct. 17

Table 3.—Growing Season

(Recorded in the period 1971-2000 at Gatlinburg, Tennessee)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	208	178	153
8 years in 10	216	186	161
5 years in 10	230	200	175
2 years in 10	244	215	190
1 year in 10	252	223	197

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
BrB2	Braddock loam, 2 to 5 percent slopes, eroded	539	0.2
BrC2	Braddock loam, 5 to 12 percent slopes, eroded	3,460	1.4
BrD2	Braddock loam, 12 to 25 percent slopes, eroded	2,743	1.1
CaD	Cataska channery silt loam, 12 to 25 percent slopes	3,559	1.4
CaE	Cataska channery silt loam, 25 to 80 percent slopes	12,864	5.0
CcE	Cataska-Sylco complex, 25 to 80 percent slopes	40,812	16.0
Co	Combs loam, rarely flooded	1,312	0.5
DcB2	Decatur silt loam, 2 to 5 percent slopes, eroded	789	0.3
DcC2	Decatur silt loam, 5 to 12 percent slopes, eroded	3,828	1.5
DcD2	Decatur silt loam, 12 to 25 percent slopes, eroded	2,201	0.9
DeB2	Dewey silt loam, 2 to 5 percent slopes, eroded	574	0.2
DeC2	Dewey silt loam, 5 to 12 percent slopes, eroded	3,126	1.2
DeD2	Dewey silt loam, 12 to 25 percent slopes, eroded	1,191	0.5
DhD	Ditney sandy loam, 12 to 25 percent slopes	1,557	0.6
Du	Dunning silty clay loam, occasionally flooded	645	0.3
Dv	Dunning silt loam, overwash, occasionally flooded	1,926	0.8
EtB	Etowah loam, 2 to 5 percent slopes	2,048	0.8
EtC	Etowah loam, 5 to 12 percent slopes	909	0.4
FuC2	Fullerton gravelly silt loam, 5 to 12 percent slopes, eroded	1,236	0.5
FuD2	Fullerton gravelly silt loam, 12 to 25 percent slopes, eroded	2,242	0.9
FuE2	Fullerton gravelly silt loam, 25 to 60 percent slopes, eroded	886	0.3
HnB	Holston loam, 2 to 5 percent slopes	1,222	0.5
HnC	Holston loam, 5 to 12 percent slopes	1,822	0.7
JcD	Junaluska-Cataska complex, 12 to 25 percent slopes	17,860	7.0
LeB	Leadvale silt loam, 2 to 5 percent slopes	547	0.2
LnB	Lonon gravelly loam, 2 to 5 percent slopes	598	0.2
LnC	Lonon gravelly loam, 5 to 12 percent slopes	1,784	0.7
LnD	Lonon gravelly loam, 12 to 25 percent slopes	984	0.4
LsC	Lostcove very cobbly loam, 5 to 12 percent slopes, extremely bouldery	1,881	0.7
LsD	Lostcove very cobbly loam, 12 to 25 percent slopes, extremely bouldery	2,126	0.8
MtC2	Montevallo channery silt loam, 5 to 12 percent slopes, eroded	702	0.3
MtD2	Montevallo channery silt loam, 12 to 25 percent slopes, eroded	1,035	0.4
MuC2	Muse silt loam, 5 to 12 percent slopes, eroded	486	0.2
MwE	Muskingum-Chiswell complex, 25 to 60 percent slopes	1,647	0.6
NnC3	Nonaburg channery silt loam, 5 to 12 percent slopes, severely eroded, rocky	685	0.3
NnD3	Nonaburg channery silt loam, 12 to 25 percent slopes, severely eroded, rocky	16,467	6.5
NnE3	Nonaburg channery silt loam, 25 to 60 percent slopes, severely eroded, rocky	32,389	12.7
NoF	Northcove stony sandy loam, 35 to 50 percent slopes, bouldery	1,576	0.6
Po	Pope sandy loam, occasionally flooded	2,464	1.0
Ro	Rosman sandy loam, occasionally flooded	1,755	0.7
Sb	Sequatchie loam, rarely flooded	2,891	1.1
ShB	Shelocta silt loam, 2 to 5 percent slopes	1,044	0.4
ShC	Shelocta silt loam, 5 to 15 percent slopes	857	0.3
SoD	Soco loam, 12 to 25 percent slopes	2,019	0.8
SoE	Soco-Cataska complex, 25 to 80 percent slopes, eroded	320	0.1
St	Staser loam, occasionally flooded	1,824	0.7
Su	Steadman silt loam, occasionally flooded	14,899	5.8
TaD2	Talbott-Rock outcrop complex, 10 to 25 percent slopes, eroded	3,528	1.4
TaE2	Talbott-Rock outcrop complex, 25 to 60 percent slopes, eroded	2,427	1.0
ToB2	Townley silt loam, 2 to 5 percent slopes, eroded	923	0.4
ToC2	Townley silt loam, 5 to 12 percent slopes, eroded	4,081	1.6
ToD2	Townley silt loam, 12 to 25 percent slopes, eroded	639	0.3
ToE2	Townley silt loam, 25 to 60 percent slopes, eroded	389	0.2
UdE	Unicoi-Ditney-Rock outcrop complex, 30 to 80 percent slopes	8,632	3.4
UnE	Unicoi-Rock outcrop complex, 30 to 80 percent slopes	19,221	7.5
Ur	Urban land	2,732	1.1

See footnote at end of table.

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
W	Water	5,620	2.2
WaB2	Waynesboro loam, 2 to 5 percent slopes, eroded	1,300	0.5
WaC2	Waynesboro loam, 5 to 12 percent slopes, eroded	814	0.3
WaD2	Waynesboro loam, 12 to 25 percent slopes, eroded	3,006	1.2
Wf	Whitesburg silt loam, occasionally flooded	1,457	0.6
	Total	255,100	100.0

* Less than 0.1 percent.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Corn	Corn silage	Grass-legume hay	Pasture	Tobacco
		Bu	Tons	Tons	AUM*	Lbs
BrB2—Braddock	2e	115.00	23.00	4.50	2.00	---
BrC2—Braddock	3e	100.00	20.00	4.00	10.60	---
BrD2—Braddock	4e	100.00	20.00	4.00	10.60	---
CaD, CaE—Cataska	7s	---	---	---	---	---
CcE:		---	---	---	---	---
Cataska	7s					
Sylco	7s					
Co—Combs	2w	135.00	---	4.50	8.50	3,200.00
DcB2—Decatur	2e	75.00	---	---	8.50	---
DcC2—Decatur	3e	50.00	---	---	5.50	---
DcD2—Decatur	4e	---	---	---	4.50	---
DeB2—Dewey	2e	85.00	---	---	---	2,400.00
DeC2—Dewey	3e	60.00	---	---	---	---
DeD2—Dewey	4e	65.00	---	---	---	---
DhD—Ditney	6e	---	---	---	---	---
Du, Dv—Dunning	3w	120.00	20.00	4.00	8.00	---
EtB—Etowah	2e	95.00	---	---	7.00	2,500.00
EtC—Etowah	3e	85.00	---	---	6.50	2,350.00
FuC2—Fullerton	3e	70.00	---	---	5.00	1,700.00

See footnote at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Corn	Corn silage	Grass-legume hay	Pasture	Tobacco
		Bu	Tons	Tons	AUM*	Lbs
FuD2—Fullerton	4e	---	---	---	4.50	---
FuE2—Fullerton	7e	---	---	---	---	---
HnB—Holston	2e	90.00	---	---	---	2,300.00
HnC—Holston	3e	85.00	---	---	---	2,200.00
JcD:		---	---	---	---	---
Junaluska	6s					
Cataska	6s					
LeB—Leadvale	2e	75.00	---	---	6.00	1,800.00
LnB—Lonon	2e	85.00	15.00	4.00	---	---
LnC—Lonon	3e	85.00	15.00	4.00	---	---
LnD—Lonon	4e	---	---	---	---	---
LsC, LsD—Lostcove	7s	---	---	---	---	---
MtC2—Montevallo	4e	---	---	---	---	---
MtD2—Montevallo	6e	---	---	---	---	---
MuC2—Muse	3e	100.00	---	---	6.50	2,700.00
MwE:		---	---	---	---	---
Muskingum	7e					
Chiswell	7e					
NnC3—Nonaburg	6s	---	---	---	---	---
NnD3, NnE3—Nonaburg	7s	---	---	---	---	---
NoF—Northcove	7s	---	---	---	2.50	---
Po—Pope	2w	130.00	---	4.00	8.00	3,000.00
Ro—Rosman	2w	135.00	---	6.00	---	2,500.00

See footnote at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Corn	Corn silage	Grass-legume hay	Pasture	Tobacco
		Bu	Tons	Tons	AUM*	Lbs
Sb—Sequatchie	1	110.00	---	3.50	7.50	2,400.00
ShB—Shelocta	2e	100.00	---	---	8.00	2,300.00
ShC—Shelocta	3e	100.00	---	---	8.00	2,300.00
SoD—Soco	6e	---	---	---	4.00	---
SoE:		---	---	---	4.00	---
Soco	7s					
Cataska	7s					
St—Staser	2w	100.00	---	---	8.00	1,200.00
Su—Steadman	2w	125.00	---	3.50	---	2,800.00
TaD2:		---	---	---	---	---
Talbott	6e					
Rock outcrop	8s					
TaE2:		---	---	---	---	---
Talbott	7e					
Rock outcrop	8s					
ToB2—Townley	2e	---	---	---	5.00	---
ToC2—Townley	3e	---	---	---	5.00	---
ToD2—Townley	4e	---	---	---	5.00	---
ToE2—Townley	7e	---	---	---	5.00	---
UdE:		---	---	---	---	---
Unicoi	7s					
Ditney	7s					
Rock outcrop	8s					
UnE:		---	---	---	---	---
Unicoi	7s					
Rock outcrop	8s					
Ur. Urban land						
W. Water						

See footnote at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Corn	Corn silage	Grass-legume hay	Pasture	Tobacco
		Bu	Tons	Tons	AUM*	Lbs
WaB2—Waynesboro	2e	105.00	---	---	---	2,500.00
WaC2—Waynesboro	3e	90.00	---	---	---	2,200.00
WaD2—Waynesboro	4e	80.00	---	---	---	---
Wf—Whitesburg	2w	100.00	---	---	8.00	2,400.00

* Animal unit month: The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Table 6.—Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
BrB2	Braddock loam, 2 to 5 percent slopes, eroded
Co	Combs loam, rarely flooded
DcB2	Decatur silt loam, 2 to 5 percent slopes, eroded
DeB2	Dewey silt loam, 2 to 5 percent slopes, eroded
Du	Dunning silty clay loam, occasionally flooded (if drained)
Dv	Dunning silt loam, overwash, occasionally flooded (if drained)
EtB	Etowah loam, 2 to 5 percent slopes
HnB	Holston loam, 2 to 5 percent slopes
LeB	Leadvale silt loam, 2 to 5 percent slopes
LnB	Lonon gravelly loam, 2 to 5 percent slopes
Po	Pope sandy loam, occasionally flooded
Ro	Rosman sandy loam, occasionally flooded
Sb	Sequatchie loam, rarely flooded
ShB	Shelocta silt loam, 2 to 5 percent slopes
St	Staser loam, occasionally flooded (if protected from flooding or not frequently flooded during the growing season)
Su	Steadman silt loam, occasionally flooded
ToB2	Townley silt loam, 2 to 5 percent slopes, eroded
WaB2	Waynesboro loam, 2 to 5 percent slopes, eroded
Wf	Whitesburg silt loam, occasionally flooded

Table 7.—Woodland Management and Productivity

Map symbol and soil name	Management concerns					Potential productivity		
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber
								cu ft/ac
BrB2, BrC2:								
Braddock	Slight	Slight	Slight	Slight	Moderate	eastern white pine	95	172.00
						northern red oak	80	57.00
						yellow-poplar	90	86.00
BrD2:								
Braddock	Moderate	Moderate	Moderate	Slight	Moderate	eastern white pine	95	172.00
						northern red oak	80	57.00
						yellow-poplar	90	86.00
CaD:								
Cataska	Moderate	Moderate	Severe	Severe	Slight	chestnut oak	50	29.00
						pitch pine	50	---
						scarlet oak	50	29.00
CaE:								
Cataska	Severe	Severe	Severe	Severe	Slight	chestnut oak	50	29.00
						pitch pine	50	---
						scarlet oak	50	29.00
CcE:								
Cataska	Severe	Severe	Severe	Severe	Slight	chestnut oak	50	29.00
						pitch pine	50	---
						scarlet oak	50	29.00
Sylco	Severe	Severe	Moderate	Moderate	Moderate	Virginia pine	60	86.00
						eastern white pine	70	114.00
						shortleaf pine	60	86.00
Co:								
Combs	Slight	Slight	Slight	Slight	Severe	American sycamore	---	---
						black walnut	---	---
						northern red oak	90	72.00
						white oak	---	---
						yellow-poplar	115	129.00

Table 7.—Woodland Management and Productivity—Continued

Map symbol and soil name	Management concerns					Potential productivity		
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber
								cu ft/ac
DcB2, DcC2:								
Decatur	Slight	Slight	Slight	Slight	Moderate	Virginia pine	70	114.00
						eastern white pine	80	143.00
						loblolly pine	80	114.00
						shortleaf pine	66	100.00
						yellow-poplar	90	86.00
DcD2:								
Decatur	Moderate	Moderate	Moderate	Slight	Moderate	Virginia pine	70	114.00
						eastern white pine	80	143.00
						loblolly pine	80	114.00
						shortleaf pine	66	100.00
						yellow-poplar	90	86.00
DeB2, DeC2:								
Dewey	Slight	Slight	Slight	Slight	Moderate	Virginia pine	70	114.00
						loblolly pine	78	114.00
						shortleaf pine	73	114.00
						southern red oak	70	57.00
						white oak	70	57.00
						yellow-poplar	90	86.00
DeD2:								
Dewey	Moderate	Moderate	Moderate	Slight	Moderate	Virginia pine	70	114.00
						loblolly pine	78	114.00
						shortleaf pine	73	114.00
						southern red oak	70	57.00
						white oak	70	57.00
						yellow-poplar	90	86.00
DhD:								
Ditney	Moderate	Moderate	Moderate	Moderate	Moderate	Virginia pine	60	86.00
						eastern white pine	70	114.00
						northern red oak	60	43.00
						shortleaf pine	60	86.00
Du, Dv:								
Dunning	Slight	Severe	Severe	Severe	Severe	American sycamore	---	---
						black willow	---	---
						boxelder	---	---
						eastern cottonwood	100	129.00
						pin oak	95	86.00
						red maple	---	---
						swamp white oak	---	---
						sweetgum	95	114.00

Table 7.—Woodland Management and Productivity—Continued

Map symbol and soil name	Management concerns					Potential productivity		
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber
								cu ft/ac
EtB, EtC:								
Etowah	Slight	Slight	Slight	Slight	Moderate	loblolly pine	90	129.00
						shortleaf pine	80	129.00
						southern red oak	80	57.00
						yellow-poplar	90	86.00
FuC2:								
Fullerton	Slight	Slight	Slight	Slight	Moderate	shortleaf pine	67	100.00
						southern red oak	70	57.00
						yellow-poplar	90	86.00
FuD2:								
Fullerton	Moderate	Moderate	Moderate	Slight	Moderate	shortleaf pine	67	100.00
						southern red oak	70	57.00
						yellow-poplar	90	86.00
FuE2:								
Fullerton	Severe	Severe	Moderate	Slight	Moderate	shortleaf pine	67	100.00
						southern red oak	70	57.00
						yellow-poplar	90	86.00
HnB, HnC:								
Holston	Slight	Slight	Slight	Slight	Moderate	northern red oak	78	57.00
						shortleaf pine	69	114.00
						yellow-poplar	86	86.00
JcD:								
Junaluska	Moderate	Moderate	Moderate	Moderate	Moderate	Virginia pine	65	100.00
						black oak	---	---
						chestnut oak	56	43.00
						eastern white pine	86	157.00
						hickory	---	---
						northern red oak	---	---
						pitch pine	66	100.00
						scarlet oak	65	43.00
						shortleaf pine	68	100.00
						white oak	61	43.00
Cataska	Moderate	Severe	Severe	Severe	Slight	chestnut oak	50	29.00
						pitch pine	50	---
						scarlet oak	50	29.00

Table 7.—Woodland Management and Productivity—Continued

Map symbol and soil name	Management concerns					Potential productivity		
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber
								cu ft/ac
LeB:								
Leadvale	Slight	Slight	Slight	Slight	Moderate	Virginia pine	70	114.00
						loblolly pine	80	114.00
						shortleaf pine	70	114.00
						white oak	70	57.00
						yellow-poplar	90	86.00
LnB, LnC:								
Lonon	Slight	Slight	Slight	Slight	Moderate	black oak	---	---
						chestnut oak	---	---
						eastern white pine	86	157.00
						hickory	---	---
						northern red oak	---	---
						pitch pine	---	---
						red maple	---	---
						scarlet oak	---	---
						white oak	---	---
						yellow-poplar	74	57.00
LnD:								
Lonon	Moderate	Moderate	Slight	Slight	Moderate	black oak	---	---
						chestnut oak	---	---
						eastern white pine	86	157.00
						hickory	---	---
						northern red oak	---	---
						pitch pine	---	---
						red maple	---	---
						scarlet oak	---	---
						white oak	---	---
						yellow-poplar	74	57.00
LsC:								
Lostcove	Slight	Severe	Moderate	Slight	Moderate	eastern hemlock	---	---
						eastern white pine	90	172.00
						northern red oak	79	57.00
						red maple	---	---
						sugar maple	64	43.00
						white oak	---	---
						yellow-poplar	88	86.00

Table 7.—Woodland Management and Productivity—Continued

Map symbol and soil name	Management concerns					Potential productivity		
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber
								cu ft/ac
LsD:								
Lostcove	Moderate	Severe	Moderate	Slight	Moderate	eastern hemlock	---	---
						eastern white pine	90	172.00
						northern red oak	79	57.00
						red maple	---	---
						sugar maple	64	43.00
						white oak	---	---
						yellow-poplar	88	86.00
MtC2:								
Montevallo	Slight	Slight	Moderate	Severe	Slight	Virginia pine	61	86.00
						loblolly pine	61	72.00
						shortleaf pine	61	86.00
MtD2:								
Montevallo	Moderate	Moderate	Moderate	Severe	Slight	Virginia pine	61	86.00
						loblolly pine	61	72.00
						shortleaf pine	61	86.00
MuC2:								
Muse	Slight	Slight	Slight	Slight	Severe	Virginia pine	67	100.00
						black oak	56	43.00
						chestnut oak	62	43.00
						red maple	---	---
						shortleaf pine	79	129.00
						white oak	59	43.00
						yellow-poplar	---	---
MwE:								
Muskingum	Severe	Severe	Moderate	Moderate	Moderate	Virginia pine	75	114.00
						eastern white pine	85	157.00
						northern red oak	78	57.00
						shortleaf pine	80	129.00
						yellow-poplar	95	100.00
Chiswell	Severe	Severe	Moderate	Severe	Slight	Virginia pine	61	86.00
						northern red oak	74	57.00
						yellow-poplar	93	100.00
NnC3:								
Nonaburg	Slight	Slight	Moderate	Severe	Moderate	chestnut oak	---	---
						eastern redcedar	40	---

Table 7.—Woodland Management and Productivity—Continued

Map symbol and soil name	Management concerns					Potential productivity		
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber
								cu ft/ac
NnD3:								
Nonaburg	Moderate	Moderate	Moderate	Severe	Moderate	chestnut oak	---	---
						eastern redcedar	40	---
NnE3:								
Nonaburg	Severe	Severe	Moderate	Severe	Moderate	chestnut oak	---	---
						eastern redcedar	40	---
NoF:								
Northcove	Severe	Severe	Moderate	Slight	Moderate	Virginia pine	---	---
						black oak	---	---
						chestnut oak	---	---
						eastern white pine	80	143.00
						pitch pine	---	---
						scarlet oak	---	---
						shortleaf pine	---	---
						white oak	---	---
						yellow-poplar	---	---
Po:								
Pope	Slight	Slight	Slight	Slight	Severe	American basswood	---	---
						American beech	---	---
						American sycamore	---	---
						bitternut hickory	---	---
						blackgum	---	---
						eastern hemlock	---	---
						northern red oak	---	---
						white oak	80	57.00
						yellow-poplar	96	100.00
Ro:								
Rosman	Slight	Slight	Slight	Slight	Severe	American sycamore	---	---
						black walnut	---	---
						eastern white pine	100	186.00
						northern red oak	---	---
						red maple	---	---
						river birch	---	---
						yellow-poplar	105	114.00
Sb:								
Sequatchie	Slight	Slight	Slight	Slight	Severe	loblolly pine	90	129.00
						white oak	80	57.00
						yellow-poplar	100	114.00

Table 7.—Woodland Management and Productivity—Continued

Map symbol and soil name	Management concerns					Potential productivity		
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber
								cu ft/ac
ShB, ShC:								
Shelocta	Slight	Slight	Slight	Slight	Severe	American beech	---	---
						cucumbertree	---	---
						red maple	81	---
						scarlet oak	80	57.00
						shortleaf pine	77	129.00
						white oak	77	57.00
						yellow-poplar	99	100.00
SoD:								
Soco	Moderate	Moderate	Moderate	Moderate	Moderate	Virginia pine	---	---
						black oak	---	---
						chestnut oak	68	57.00
						eastern white pine	85	157.00
						northern red oak	---	---
						pitch pine	---	---
						scarlet oak	76	57.00
						shortleaf pine	61	86.00
						white oak	---	---
						yellow-poplar	---	---
SoE:								
Soco	Severe	Severe	Moderate	Moderate	Moderate	Virginia pine	---	---
						black oak	---	---
						chestnut oak	68	57.00
						eastern white pine	85	157.00
						northern red oak	---	---
						pitch pine	---	---
						scarlet oak	76	57.00
						shortleaf pine	61	86.00
						white oak	---	---
						yellow-poplar	---	---
Cataska	Severe	Severe	Severe	Severe	Slight	chestnut oak	50	29.00
						pitch pine	50	---
						scarlet oak	50	29.00
St:								
Staser	Slight	Slight	Slight	Slight	Severe	black walnut	---	---
						loblolly pine	90	129.00
						white oak	80	57.00
						yellow-poplar	100	114.00

Table 7.—Woodland Management and Productivity—Continued

Map symbol and soil name	Management concerns					Potential productivity		
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber
								cu ft/ac
Su:								
Steadman	Slight	Slight	Slight	Slight	Severe	black walnut	---	---
						northern red oak	86	72.00
						red maple	---	---
						white ash	85	57.00
						white oak	85	72.00
						yellow-poplar	95	100.00
TaD2:								
Talbott	Moderate	Moderate	Moderate	Moderate	Moderate	eastern redcedar	46	57.00
						loblolly pine	80	114.00
						northern red oak	65	43.00
						shortleaf pine	64	100.00
Rock outcrop.								
TaE2:								
Talbott	Severe	Severe	Moderate	Moderate	Moderate	eastern redcedar	46	57.00
						loblolly pine	80	114.00
						northern red oak	65	43.00
						shortleaf pine	64	100.00
Rock outcrop.								
ToB2, ToC2:								
Townley	Slight	Slight	Slight	Moderate	Moderate	Virginia pine	70	---
						loblolly pine	70	---
						shortleaf pine	60	---
ToD2:								
Townley	Moderate	Moderate	Moderate	Moderate	Moderate	Virginia pine	70	114.00
						loblolly pine	70	86.00
						shortleaf pine	60	86.00
ToE2:								
Townley	Severe	Severe	Moderate	Moderate	Moderate	Virginia pine	70	114.00
						loblolly pine	70	86.00
						shortleaf pine	60	86.00

Table 7.—Woodland Management and Productivity—Continued

Map symbol and soil name	Management concerns					Potential productivity		
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber
								cu ft/ac
UdE:								
Unicoi	Severe	Severe	Severe	Severe	Slight	Virginia pine	50	72.00
						chestnut oak	50	29.00
						pitch pine	40	57.00
						scarlet oak	50	29.00
Ditney	Severe	Severe	Moderate	Moderate	Moderate	Virginia pine	60	86.00
						eastern white pine	70	114.00
						northern red oak	60	43.00
						shortleaf pine	60	86.00
Rock outcrop.								
UnE:								
Unicoi	Moderate	Severe	Severe	Severe	Slight	Virginia pine	50	72.00
						chestnut oak	50	29.00
						pitch pine	40	57.00
						scarlet oak	50	29.00
Rock outcrop.								
Ur.								
Urban land								
W.								
Water								
WaB2, WaC2:								
Waynesboro	Slight	Slight	Slight	Slight	Moderate	loblolly pine	80	114.00
						southern red oak	70	57.00
						white oak	70	57.00
						yellow-poplar	90	86.00
WaD2:								
Waynesboro	Moderate	Moderate	Moderate	Slight	Moderate	loblolly pine	80	114.00
						southern red oak	70	57.00
						white oak	70	57.00
						yellow-poplar	90	86.00
Wf:								
Whitesburg	Slight	Slight	Slight	Slight	Severe	black locust	---	---
						eastern white pine	90	172.00
						southern red oak	75	57.00
						sweetgum	90	100.00
						yellow-poplar	95	100.00

Table 8.—Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
BrB2:					
Braddock	Slight	Slight	Moderate: slope	Slight	Slight
BrC2:					
Braddock	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
BrD2:					
Braddock	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
CaD:					
Cataska	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, small stones	Moderate: slope	Severe: slope, depth to rock
CaE:					
Cataska	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, small stones	Severe: slope	Severe: slope, depth to rock
CcE:					
Cataska	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, small stones	Severe: slope	Severe: slope, depth to rock
Sylco	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
Co:					
Combs	Severe: flooding	Slight	Slight	Slight	Moderate: flooding
DcB2:					
Decatur	Slight	Slight	Moderate: slope	Slight	Slight
DcC2:					
Decatur	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
DcD2:					
Decatur	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
DeB2:					
Dewey	Slight	Slight	Moderate: slope	Slight	Slight
DeC2:					
Dewey	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope

Table 8.—Recreational Development—Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
DeD2:					
Dewey	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
DhD:					
Ditney	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
Du, Dv:					
Dunning	Severe: flooding wetness	Severe: wetness	Severe: wetness	Severe: erodes easily wetness	Severe: wetness
EtB:					
Etowah	Slight	Slight	Moderate: slope	Slight	Slight
EtC:					
Etowah	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
FuC2:					
Fullerton	Moderate: slope small stones	Moderate: slope small stones	Severe: slope small stones	Slight	Moderate: small stones
FuD2:					
Fullerton	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope small stones
FuE2:					
Fullerton	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
HnB:					
Holston	Slight	Slight	Moderate: slope	Slight	Slight
HnC:					
Holston	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
JcD:					
Junaluska	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
Cataska	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope small stones	Moderate: slope	Severe: slope depth to rock
LeB:					
Leadvale	Moderate: wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Severe: erodes easily	Slight
LnB:					
Lonon	Slight	Slight	Moderate: slope	Slight	Slight

Table 8.—Recreational Development—Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
LnC:					
Lonon	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
LnD:					
Lonon	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
LsC:					
Lostcove	Severe: large stones small stones	Severe: large stones small stones	Severe: slope large stones small stones	Severe: too cobbly large stones	Moderate: large stones small stones
LsD:					
Lostcove	Severe: slope large stones small stones	Severe: slope large stones small stones	Severe: slope large stones small stones	Severe: slope too cobbly large stones	Severe: slope
MtC2:					
Montevallo	Severe: depth to rock	Severe: depth to rock	Severe: slope	Slight	Severe: slope depth to rock
MtD2:					
Montevallo	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Moderate: slope	Severe: slope depth to rock
MuC2:					
Muse	Moderate: percs slowly slope	Moderate: percs slowly slope	Severe: slope	Severe: erodes easily	Moderate: slope
MwE:					
Muskingum	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily slope	Severe: slope
Chiswell	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock
NnC3:					
Nonaburg	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Slight	Severe: depth to rock
NnD3:					
Nonaburg	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Moderate: slope	Severe: slope depth to rock
NnE3:					
Nonaburg	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock

Table 8.—Recreational Development—Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
NoF:					
Northcove	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Po:					
Pope	Severe: flooding	Slight	Moderate: flooding	Slight	Moderate: flooding
Ro:					
Rosman	Severe: flooding	Slight	Moderate: flooding	Slight	Moderate: flooding
Sb:					
Sequatchie	Severe: flooding	Slight	Moderate: slope	Slight	Slight
ShB:					
Shelocta	Slight	Slight	Moderate: slope	Slight	Slight
ShC:					
Shelocta	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
SoD:					
Soco	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
SoE:					
Soco	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Cataska	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope small stones	Severe: slope	Severe: slope depth to rock
St:					
Staser	Severe: flooding	Slight	Moderate: flooding	Slight	Moderate: flooding
Su:					
Steadman	Severe: flooding	Moderate: percs slowly wetness	Moderate: flooding wetness	Slight	Moderate: flooding wetness
TaD2:					
Talbott	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
Rock outcrop.					
TaE2:					
Talbott	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock outcrop.					
ToB2:					
Townley	Moderate: percs slowly	Moderate: percs slowly	Moderate: slope	Slight	Moderate: depth to rock

Table 8.—Recreational Development—Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
ToC2:					
Townley	Moderate: percs slowly slope	Moderate: percs slowly slope	Severe: slope	Slight	Moderate: slope depth to rock
ToD2:					
Townley	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
ToE2:					
Townley	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
UdE:					
Unicoi	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
Ditney	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock outcrop.					
UnE:					
Unicoi	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
Rock outcrop.					
Ur.					
Urban land					
W.					
Water					
WaB2:					
Waynesboro	Slight	Slight	Moderate: slope	Slight	Slight
WaC2:					
Waynesboro	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
WaD2:					
Waynesboro	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
Wf:					
Whitesburg	Severe: flooding	Moderate: wetness	Moderate: flooding slope	Slight	Moderate: flooding

Table 9.—Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
BrB2:										
Braddock	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
BrC2, BrD2:										
Braddock	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
CaD, CaE:										
Cataska	Very poor	Poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor
CcE:										
Cataska	Very poor	Poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor
Sylco	Very poor	Poor	Good	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
Co:										
Combs	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Very poor
DcB2, DcC2:										
Decatur	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
DcD2:										
Decatur	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
DeB2:										
Dewey	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
DeC2:										
Dewey	Very poor	Very poor	Fair	Good	Good	Very poor	Very poor	Poor	Poor	Very poor
DeD2:										
Dewey	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
DhD:										
Ditney	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Du, Dv:										
Dunning	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
EtB:										
Etowah	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 9.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life
EtC:										
Etowah	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
FuC2:										
Fullerton	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
FuD2:										
Fullerton	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
FuE2:										
Fullerton	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
HnB:										
Holston	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
HnC:										
Holston	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
JcD:										
Junaluska	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
Cataska	Very poor	Poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor
LeB:										
Leadvale	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
LnB, LnC:										
Lonon	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
LnD:										
Lonon	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Fair	Very poor
LsC:										
Lostcove	Poor	Fair	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
LsD:										
Lostcove	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
MtC2, MtD2:										
Montevallo	Poor	Poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
MuC2:										
Muse	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 9.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life
MwE:										
Muskingum	Very poor	Poor	Good	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
Chiswell	Very poor	Poor	Good	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
NnC3:										
Nonaburg	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Fair	Very poor
NnD3:										
Nonaburg	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Fair	Very poor
NnE3:										
Nonaburg	Very poor	Very poor	Fair	Poor	Poor	Very poor	Very poor	Very poor	Fair	Very poor
NoF:										
Northcove	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Po:										
Pope	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Ro:										
Rosman	Good	Good	Good	Good	Good	Fair	Very poor	Good	Good	Very poor
Sb:										
Sequatchie	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
ShB, ShC:										
Shelocta	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
SoD:										
Soco	Very poor	Poor	Good	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
SoE:										
Soco	Very poor	Poor	Good	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
Cataska	Very poor	Poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor
St:										
Staser	Poor	Fair	Fair	Good	Good	Poor	Very poor	Fair	Good	Very poor
Su:										
Steadman	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor

Table 9.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life
TaD2:										
Talbott	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Rock outcrop.										
TaE2:										
Talbott	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Rock outcrop.										
ToB2, ToC2:										
Townley	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
ToD2, ToE2:										
Townley	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
UdE:										
Unicoi	Very poor	Very poor	Poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Ditney	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Rock outcrop.										
UnE:										
Unicoi	Very poor	Very poor	Poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Rock outcrop.										
Ur.										
Urban land										
W.										
Water										
WaB2:										
Waynesboro	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
WaC2, WaD2:										
Waynesboro	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Wf:										
Whitesburg	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 10.—Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need f
investigation. See text for definitions of terms used in this table. Absence of an entry indica
is applicable)

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roa and stree
BrB2:					
Braddock	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: slope	Moderate: low streng shrink-swe
BrC2:					
Braddock	Moderate: slope too clayey	Moderate: slope	Moderate: slope	Severe: slope	Moderate: low streng shrink-swe slope
BrD2:					
Braddock	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
CaD, CaE:					
Cataska	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope
CcE:					
Cataska	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope
Sylco	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope
Co:					
Combs	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding
DcB2:					
Decatur	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: low streng shrink-swe
DcC2:					
Decatur	Moderate: slope too clayey	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Moderate: low streng shrink-swe slope

Table 10.—Building Site Development—Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roa and stree
DcD2:					
Decatur	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
DeB2:					
Dewey	Moderate: too clayey	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: shrink-swell	Moderate: low streng shrink-swe
DeC2:					
Dewey	Moderate: slope too clayey	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Moderate: low streng shrink-swe slope
DeD2:					
Dewey	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
DhD:					
Ditney	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope
Du, Dv:					
Dunning	Severe: wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding low streng wetness
EtB:					
Etowah	Slight	Slight	Slight	Slight	Moderate: low streng
EtC:					
Etowah	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: low streng slope
FuC2:					
Fullerton	Moderate: slope too clayey	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Moderate: low streng shrink-swe slope

Table 10.—Building Site Development—Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roa and stree
FuD2:					
Fullerton	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
FuE2:					
Fullerton	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
HnB:					
Holston	Slight	Slight	Slight	Slight	Slight
HnC:					
Holston	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope
JcD:					
Junaluska	Moderate: slope depth to rock	Moderate: slope	Moderate: slope depth to rock	Severe: slope	Moderate: low streng slope
Cataska	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope
LeB:					
Leadvale	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: low streng wetness
LnB:					
Lonon	Slight	Slight	Slight	Slight	Moderate: low streng
LnC:					
Lonon	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: low streng slope
LnD:					
Lonon	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope

Table 10.—Building Site Development—Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roa and stree
LsC:					
Lostcove	Severe: large stones	Severe: large stones	Severe: large stones	Severe: large stones	Severe: large ston
LsD:					
Lostcove	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large ston slope
MtC2:					
Montevallo	Severe: slope depth to rock	Moderate: slope depth to rock	Severe: slope depth to rock	Severe: slope	Severe: slope depth to r
MtD2:					
Montevallo	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope
MuC2:					
Muse	Moderate: slope too clayey	Moderate: shrink-swell slope	Moderate: shrink-swell slope	Severe: slope	Severe: low streng slope
MwE:					
Muskingum	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Chiswell	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope
NnC3:					
Nonaburg	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: low streng depth to r
NnD3:					
Nonaburg	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: low streng depth to r slope
NnE3:					
Nonaburg	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope

Table 10.—Building Site Development—Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roa and stree
NoF:					
Northcove	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: large ston slope
Po:					
Pope	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
Ro:					
Rosman	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding
Sb:					
Sequatchie	Slight	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding
ShB:					
Shelocta	Slight	Slight	Slight	Slight	Moderate: low streng
ShC:					
Shelocta	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: low streng slope
SoD:					
Soco	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
SoE:					
Soco	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Cataska	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope
St:					
Staser	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding
Su:					
Steadman	Severe: flooding wetness	Severe: flooding	Severe: flooding wetness	Severe: flooding	Severe: flooding

Table 10.—Building Site Development—Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roa and stree
TaD2:					
Talbott	Severe: slope depth to rock	Moderate: slope depth to rock	Severe: slope depth to rock	Severe: slope	Severe: slope
Rock outcrop.					
TaE2:					
Talbott	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock outcrop.					
ToB2:					
Townley	Moderate: too clayey depth to rock	Moderate: shrink-swell	Moderate: shrink-swell depth to rock	Moderate: shrink-swell	Severe: low streng
ToC2:					
Townley	Moderate: slope too clayey depth to rock	Moderate: shrink-swell slope	Moderate: shrink-swell slope depth to rock	Severe: slope	Severe: low streng slope
ToD2:					
Townley	Moderate: slope depth to rock	Moderate: slope	Moderate: slope depth to rock	Severe: slope	Severe: slope
ToE2:					
Townley	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: slope
UdE:					
Unicoi	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to r
Ditney	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope
Rock outcrop.					

Table 10.—Building Site Development—Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roa and stree
UnE:					
Unicoi	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to r
Rock outcrop.					
Ur.					
Urban land					
W.					
Water					
WaB2:					
Waynesboro	Moderate: too clayey	Slight	Slight	Slight	Moderate: low streng
WaC2:					
Waynesboro	Moderate: slope too clayey	Moderate: slope	Moderate: slope	Severe: slope	Moderate: low streng slope
WaD2:					
Waynesboro	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Wf:					
Whitesburg	Severe: flooding wetness	Severe: flooding	Severe: flooding wetness	Severe: flooding	Severe: flooding

Table 11.—Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
BrB2:					
Braddock	Moderate: percs slowly	Severe: seepage slope	Severe: seepage too clayey	Moderate: slope	Poor: hard to pack too clayey
BrC2:					
Braddock	Moderate: percs slowly slope	Severe: seepage slope	Severe: seepage slope too clayey	Severe: slope	Poor: hard to pack slope too clayey
BrD2:					
Braddock	Severe: slope	Severe: seepage slope	Severe: seepage slope too clayey	Severe: slope	Poor: hard to pack slope too clayey
CaD, CaE:					
Cataska	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Poor: seepage small stones depth to rock
CcE:					
Cataska	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Poor: seepage small stones depth to rock
Sylco	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Poor: slope small stones depth to rock
Co:					
Combs	Severe: flooding	Severe: flooding seepage	Severe: flooding seepage	Severe: flooding seepage	Good
DcB2:					
Decatur	Moderate: percs slowly	Moderate: seepage slope	Moderate: too clayey	Slight	Fair: hard to pack too clayey
DcC2:					
Decatur	Moderate: percs slowly slope	Severe: slope	Moderate: slope too clayey	Moderate: slope	Fair: hard to pack slope too clayey
DcD2:					
Decatur	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope

Table 11.—Sanitary Facilities—Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
DeB2:					
Dewey	Moderate: percs slowly	Moderate: seepage slope	Moderate: too clayey	Slight	Fair: hard to pack too clayey
DeC2:					
Dewey	Moderate: percs slowly slope	Severe: slope	Moderate: slope too clayey	Moderate: slope	Fair: hard to pack slope too clayey
DeD2:					
Dewey	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
DhD:					
Ditney	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
Du, Dv:					
Dunning	Severe: flooding percs slowly wetness	Severe: flooding wetness	Severe: flooding too clayey wetness	Severe: flooding wetness	Poor: hard to pack too clayey wetness
EtB:					
Etowah	Moderate: percs slowly	Moderate: seepage slope	Moderate: too clayey	Slight	Fair: too clayey
EtC:					
Etowah	Moderate: percs slowly slope	Severe: slope	Moderate: slope too clayey	Moderate: slope	Fair: too clayey
FuC2:					
Fullerton	Moderate: percs slowly slope	Severe: slope	Moderate: slope too clayey	Moderate: slope	Poor: small stones
FuD2, FuE2:					
Fullerton	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope small stones
HnB:					
Holston	Moderate: percs slowly	Moderate: seepage slope	Moderate: too clayey	Slight	Fair: small stones too clayey
HnC:					
Holston	Moderate: percs slowly slope	Severe: slope	Moderate: slope too clayey	Moderate: slope	Fair: slope small stones too clayey

Table 11.—Sanitary Facilities—Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
JcD:					
Junaluska	Severe: slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: seepage, depth to rock	Severe: seepage, depth to rock	Poor: small stones, depth to rock
Cataska	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Poor: seepage, small stones, depth to rock
LeB:					
Leadvale	Severe: percs slowly, wetness	Severe: wetness	Severe: depth to rock	Moderate: wetness, depth to rock	Fair: too clayey, depth to rock
LnB:					
Lonon	Moderate: percs slowly	Severe: slope	Severe: too acid	Moderate: slope	Poor: too acid
LnC:					
Lonon	Moderate: percs slowly, slope	Severe: slope	Severe: too acid	Moderate: slope	Poor: too acid
LnD:					
Lonon	Severe: slope	Severe: slope	Severe: slope, too acid	Severe: slope	Poor: slope, too acid
LsC:					
Lostcove	Severe: large stones, slope	Severe: large stones, seepage, slope	Severe: large stones, too acid	Slight	Poor: large stones
LsD:					
Lostcove	Severe: large stones, slope	Severe: large stones, seepage, slope	Severe: large stones, slope, too acid	Severe: slope	Poor: large stones, slope
MtC2, MtD2:					
Montevallo	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Poor: slope, small stones, depth to rock
MuC2:					
Muse	Severe: percs slowly	Severe: slope	Severe: wetness, depth to rock	Moderate: slope, wetness, depth to rock	Poor: hard to pack, too clayey
MwE:					
Muskingum	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Poor: slope, small stones, depth to rock

Table 11.—Sanitary Facilities—Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
MwE:					
Chiswell	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Poor: slope, small stones, depth to rock
NnC3:					
Nonaburg	Severe: percs slowly, depth to rock	Severe: slope, depth to rock	Severe: too clayey, depth to rock	Severe: depth to rock	Poor: hard to pack, too clayey, depth to rock
NnD3, NnE3:					
Nonaburg	Severe: percs slowly, slope, depth to rock	Severe: slope, depth to rock	Severe: slope, too clayey, depth to rock	Severe: slope, depth to rock	Poor: hard to pack, too clayey, depth to rock
NoF:					
Northcove	Severe: large stones, slope	Severe: large stones, seepage, slope	Severe: large stones, seepage, slope	Severe: seepage, slope	Poor: large stones, slope, too acid
Po:					
Pope	Severe: flooding, percs slowly	Severe: flooding, seepage	Severe: seepage	Severe: seepage	Good
Ro:					
Rosman	Severe: flooding, wetness	Severe: flooding, seepage, wetness	Severe: flooding, seepage, wetness	Severe: flooding, seepage, wetness	Fair: wetness
Sb:					
Sequatchie	Moderate: percs slowly, flooding	Severe: seepage	Severe: seepage	Slight	Fair: small stones, too clayey
ShB:					
Shelocta	Moderate: percs slowly	Severe: seepage, slope	Severe: seepage	Moderate: slope	Poor: small stones
ShC:					
Shelocta	Moderate: percs slowly, slope	Severe: seepage, slope	Severe: seepage	Moderate: slope	Poor: small stones
SoD:					
Soco	Severe: slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: seepage, slope, depth to rock	Poor: slope, too acid, depth to rock

Table 11.—Sanitary Facilities—Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
SoE:					
Soco	Severe: slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: seepage, slope, depth to rock	Poor: slope, too acid, depth to rock
Cataska	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Poor: seepage, small stones, depth to rock
St:					
Staser	Severe: flooding, wetness	Severe: flooding, seepage, wetness	Severe: flooding, seepage, wetness	Severe: flooding, seepage, wetness	Good
Su:					
Steadman	Severe: flooding, percs slowly, wetness	Severe: flooding, seepage, wetness	Severe: flooding, seepage, wetness	Severe: flooding, wetness	Fair: too clayey, wetness
TaD2:					
Talbott	Severe: percs slowly, depth to rock	Severe: slope, depth to rock	Severe: too clayey, depth to rock	Severe: depth to rock	Poor: hard to pack, too clayey, depth to rock
Rock outcrop.					
TaE2:					
Talbott	Severe: percs slowly, slope, depth to rock	Severe: slope, depth to rock	Severe: slope, too clayey, depth to rock	Severe: slope, depth to rock	Poor: hard to pack, too clayey, depth to rock
Rock outcrop.					
ToB2:					
Townley	Severe: depth to rock, percs slowly	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: hard to pack, too clayey, depth to rock
ToC2:					
Townley	Severe: percs slowly, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, depth to rock	Poor: hard to pack, too clayey, depth to rock
ToD2, ToE2:					
Townley	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: hard to pack, too clayey, depth to rock

Table 11.—Sanitary Facilities—Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
UdE:					
Unicoi	Severe: slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: slope, depth to rock	Poor: slope, small stones, depth to rock
Ditney	Severe: slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: seepage, slope, depth to rock	Poor: slope, depth to rock
Rock outcrop.					
UnE:					
Unicoi	Severe: slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: seepage, slope, depth to rock	Severe: slope, depth to rock	Poor: slope, small stones, depth to rock
Rock outcrop.					
Ur.					
Urban land					
W.					
Water					
WaB2:					
Waynesboro	Moderate: percs slowly	Moderate: seepage, slope	Moderate: too clayey	Slight	Fair: hard to pack, too clayey
WaC2:					
Waynesboro	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, too clayey	Moderate: slope	Fair: hard to pack, slope, too clayey
WaD2:					
Waynesboro	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
Wf:					
Whitesburg	Severe: wetness	Severe: flooding, wetness	Severe: wetness, depth to rock	Severe: wetness	Fair: too clayey, wetness, depth to rock

Table 12.—Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
BrB2:				
Braddock	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim, small stones, too clayey
BrC2, BrD2:				
Braddock	Fair: low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim, small stones, too clayey
CaD, CaE:				
Cataska	Poor: slope, depth to rock	Improbable: small stones	Improbable: thin layer	Poor: slope, small stones, depth to rock
CcE:				
Cataska	Poor: slope, depth to rock	Improbable: small stones	Improbable: thin layer	Poor: slope, small stones, depth to rock
Sylco	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, small stones
Co:				
Combs	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
DcB2, DcC2:				
Decatur	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
DcD2:				
Decatur	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: slope, too clayey
DeB2, DeC2:				
Dewey	Fair: low strength, shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
DeD2:				
Dewey	Fair: low strength, shrink-swell, slope	Improbable: excess fines	Improbable: excess fines	Poor: slope, too clayey
DhD:				
Ditney	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, small stones

Table 12.—Construction Materials—Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
Du, Dv:				
Dunning	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: thin layer wetness
EtB:				
Etowah	Fair: low strength thin layer	Improbable: excess fines	Improbable: excess fines	Fair: small stones too clayey
EtC:				
Etowah	Fair: low strength thin layer	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones too clayey
FuC2:				
Fullerton	Fair: low strength shrink-swell	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones too clayey
FuD2:				
Fullerton	Fair: low strength shrink-swell slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones too clayey
FuE2:				
Fullerton	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones too clayey
HnB, HnC:				
Holston	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
JcD:				
Junaluska	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones
Cataska	Poor: slope depth to rock	Improbable: small stones	Improbable: thin layer	Poor: slope small stones depth to rock
LeB:				
Leadvale	Fair: low strength thin layer depth to rock	Improbable: excess fines	Improbable: excess fines	Good
LnB, LnC:				
Lonon	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim too acid

Table 12.—Construction Materials—Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
LnD:				
Lonon	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim too acid
LsC, LsD:				
Lostcove	Poor: large stones	Improbable: large stones excess fines	Improbable: large stones excess fines	Poor: area reclaim small stones too acid
MtC2, MtD2:				
Montevallo	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones depth to rock
MuC2:				
Muse	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
MwE:				
Muskingum	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones
Chiswell	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones depth to rock
NnC3:				
Nonaburg	Poor: area reclaim low strength depth to rock	Improbable: thin layer excess fines	Improbable: thin layer excess fines	Poor: area reclaim thin layer too clayey depth to rock
NnD3:				
Nonaburg	Poor: area reclaim low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope too clayey depth to rock
NnE3:				
Nonaburg	Poor: area reclaim low strength slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim too clayey depth to rock
NoF:				
Northcove	Poor: large stones slope	Improbable: large stones excess fines	Improbable: large stones excess fines	Poor: area reclaim large stones too acid

Table 12.—Construction Materials—Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
Po:				
Pope	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim
Ro:				
Rosman	Fair: wetness	Probable	Probable	Fair: area reclaim small stones
Sb:				
Sequatchie	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
ShB, ShC:				
Shelocta	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
SoD:				
Soco	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones too acid
SoE:				
Soco	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones too acid
Cataska	Poor: slope depth to rock	Improbable: small stones	Improbable: thin layer	Poor: slope small stones depth to rock
St:				
Staser	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
Su:				
Steadman	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim too clayey
TaD2:				
Talbott	Poor: low strength depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Rock outcrop.				
TaE2:				
Talbott	Poor: low strength slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope too clayey
Rock outcrop.				

Table 12.—Construction Materials—Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
ToB2, ToC2, ToD2, ToE2:				
Townley	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
UdE:				
Unicoi	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, small stones, depth to rock
Ditney	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, small stones
Rock outcrop.				
UnE:				
Unicoi	Poor: slope, depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope, small stones, depth to rock
Rock outcrop.				
Ur.				
Urban land				
W.				
Water				
WaB2, WaC2:				
Waynesboro	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
WaD2:				
Waynesboro	Fair: low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: slope, too clayey
Wf:				
Whitesburg	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: small stones, too clayey

Table 13.—Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsit
See text for definitions of terms used in this table. Absence of an entry indicates that no rating is ap

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces diversio
BrB2:						
Braddock	Moderate: seepage slope	Moderate: hard to pack	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation slope
BrC2, BrD2:						
Braddock	Severe: slope	Moderate: hard to pack	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation slope
CaD, CaE:						
Cataska	Severe: slope depth to rock	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation slope droughty depth to
CcE:						
Cataska	Severe: slope depth to rock	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation slope droughty depth to
Sylco	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation slope droughty
Co:						
Combs	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: flooding	Favorable
DcB2:						
Decatur	Moderate: seepage slope	Severe: hard to pack	Severe: no water	Limitation: deep to water	Limitation: slope	Favorable
DcC2, DcD2:						
Decatur	Severe: slope	Severe: hard to pack	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation slope
DeB2:						
Dewey	Moderate: seepage slope	Severe: hard to pack	Severe: no water	Limitation: deep to water	Limitation: slope	Favorable

Table 13.—Water Management—Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces diversio
DeC2, DeD2:						
Dewey	Severe: slope	Severe: hard to pack	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation slope
DhD:						
Ditney	Severe: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation slope droughty depth to
Du, Dv:						
Dunning	Slight	Severe: wetness	Severe: slow refill	Limitation: flooding percs slowly	Limitation: erodes easily percs slowly wetness	Limitation erodes ea percs slo wetness
EtB:						
Etowah	Moderate: seepage slope	Moderate: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation erodes ea
EtC:						
Etowah	Severe: slope	Moderate: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation erodes ea slope
FuC2, FuD2, FuE2:						
Fullerton	Severe: slope	Severe: hard to pack piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation large sto slope
HnB:						
Holston	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Favorable
HnC:						
Holston	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation slope
JcD:						
Junaluska	Severe: slope	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation slope depth to

Table 13.—Water Management—Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces diversio
JcD:						
Cataska	Severe: slope, depth to rock	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope, droughty, depth to rock	Limitation slope, droughty depth to
LeB:						
Leadvale	Moderate: slope, depth to rock	Severe: piping	Severe: no water	Limitation: percs slowly, slope	Limitation: percs slowly, slope, wetness	Limitation erodes ea wetness
LnB:						
Lonon	Moderate: seepage, slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Favorable
LnC, LnD:						
Lonon	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation slope
LsC:						
Lostcove	Severe: slope	Severe: large stones, seepage	Severe: no water	Limitation: deep to water	Limitation: large stones, slope, droughty	Limitation large sto
LsD:						
Lostcove	Severe: slope	Severe: large stones, seepage	Severe: no water	Limitation: deep to water	Limitation: large stones, slope, droughty	Limitation large sto slope
MtC2, MtD2:						
Montevallo	Severe: slope, depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope, depth to rock, droughty	Limitation slope depth to
MuC2:						
Muse	Severe: slope	Moderate: hard to pack, thin layer	Severe: slow refill	Limitation: deep to water	Limitation: erodes easily, percs slowly, slope	Limitation erodes ea percs slo slope

Table 13.—Water Management—Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces diversi
MwE:						
Muskingum	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitatio erodes e slope depth to
Chiswell	Severe: slope depth to rock	Severe: thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitatio large st slope depth to
NnC3, NnD3, NnE3:						
Nonaburg	Severe: slope depth to rock	Severe: hard to pack thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitatio slope depth to
NoF:						
Northcove	Severe: slope	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitatio large st slope
Po:						
Pope	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: flooding	Favorable
Ro:						
Rosman	Severe: seepage	Severe: piping	Severe: cutbanks cave	Limitation: flooding	Limitation: flooding	Favorable
Sb:						
Sequatchie	Moderate: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Favorable
ShB:						
Shelocta	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Favorable
ShC:						
Shelocta	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitatio slope

Table 13.—Water Management—Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces diversio
SoD:						
Soco	Severe: seepage slope	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation slope depth to
SoE:						
Soco	Severe: seepage slope	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation slope depth to
Cataska	Severe: slope depth to rock	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation slope droughty depth to
St:						
Staser	Severe: seepage	Severe: piping	Moderate: slow refill deep to water	Limitation: deep to water	Limitation: flooding	Favorable
Su:						
Steadman	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Limitation: flooding	Limitation: flooding wetness	Limitation erodes ea wetness
TaD2, TaE2:						
Talbott	Severe: slope	Severe: hard to pack	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock	Limitation slope depth to
Rock outcrop.						
ToB2:						
Townley	Moderate: slope depth to rock	Severe: hard to pack	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation erodes ea depth to
ToC2:						
Townley	Severe: slope	Severe: hard to pack	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation erodes ea slope depth to

Table 13.—Water Management—Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces diversio
ToD2, ToE2:						
Townley	Severe: slope	Slight	Severe: no water	Limitation: deep to water	Limitation: percs slowly slope	Limitation erodes ea slope depth to
UdE:						
Unicoi	Severe: slope depth to rock	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation large sto slope depth to
Ditney	Severe: slope seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation slope depth to
Rock outcrop.						
UnE:						
Unicoi	Severe: slope depth to rock	Severe: large stones	Severe: no water	Limitation: deep to water	Limitation: large stones slope droughty	Limitation large sto slope depth to
Rock outcrop.						
Ur.						
Urban land						
W.						
Water						
WaB2:						
Waynesboro	Moderate: seepage slope	Severe: hard to pack piping	Severe: no water	Limitation: deep to water	Limitation: slope	Favorable
WaC2, WaD2:						
Waynesboro	Severe: slope	Severe: hard to pack piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation slope

Table 13.—Water Management—Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces diversio
Wf: Whitesburg	Moderate: seepage slope depth to rock	Moderate: piping thin layer wetness	Moderate: slow refill deep to water depth to rock	Limitation: slope	Limitation: slope wetness	Limitation wetness

Table 14.—Engineering Index Properties

(Absence of an entry indicates that the data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
BrB2, BrC2, BrD2:									
Braddock--------	0-5	Loam	CL, CL-ML	A-4	0	0-5	85-100	80-100	65-85
	5-60	Gravelly clay loam, gravelly clay, clay	CH, CL	A-7	0	0-15	80-100	55-100	40-90
CaD, CaE:									
Cataska---------	0-2	Channery silt loam	GC-GM, CL-ML	A-4	0-2	3-15	55-80	55-75	45-70
	2-12	Very channery silt loam, extremely channery silt loam	GC, GC-GM	A-1, A-2	0-2	10-25	15-50	10-50	10-40
	12-40	Weathered bedrock	---	---	---	---	---	---	---
	>40	Unweathered bedrock	---	---	---	---	---	---	---
CcE:									
Cataska---------	0-2	Channery silt loam	GC-GM, CL-ML	A-4	0-2	3-15	55-80	55-75	45-70
	2-12	Very channery silt loam, extremely channery silt loam	GC, GC-GM	A-2, A-1	0-2	10-25	15-50	10-50	10-40
	12-40	Weathered bedrock	---	---	---	---	---	---	---
	>40	Unweathered bedrock	---	---	---	---	---	---	---
Sylco-----------	0-2	Channery silt loam	CL-ML, GC-GM	A-4	0-2	3-15	55-80	55-75	45-70
	2-25	Very channery silt loam, extremely channery silt loam	GC, GC-GM	A-1, A-2	0-2	10-25	15-50	10-50	10-40
	25-33	Bedrock	---	---	---	---	---	---	---
	>33	Unweathered bedrock	---	---	---	---	---	---	---

Table 14.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--			
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	
	In				Pct	Pct				
Co:										
Combs	0-11	Loam	ML, SM, SC-SM, CL-ML	A-2, A-4	0	0	90-100	80-100	65-85	4
	11-62	Loam, sandy loam	SC-SM, SM, ML, CL-ML	A-2, A-4	0	0	90-100	80-100	60-90	3
DcB2, DcC2, DcD2:										
Decatur	0-8	Silt loam	CL-ML, CL	A-4	0	0-3	90-100	80-100	75-95	6
	8-60	Silty clay loam, silty clay, clay	CL	A-6, A-7	0	0-3	90-100	80-100	75-95	6
DeB2, DeC2, DeD2:										
Dewey	0-8	Silt loam	CL, CL-ML	A-4	0	0-3	90-100	80-100	75-95	6
	8-20	Clay loam, silty clay loam	CL, CL-ML	A-6	0	0	90-100	80-100	75-95	7
	20-60	Clay, silty clay	CL	A-7, A-6	0	0-2	90-100	80-100	75-95	7
DhD:										
Ditney	0-9	Sandy loam	SM, SC-SM	A-2-4, A-4	0	0-6	90-100	80-95	50-70	2
	9-29	Loam, sandy loam, fine sandy loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0-5	90-100	80-95	50-80	3
	29-36	Loam, sandy loam, cobbly loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	15-30	65-100	60-90	45-75	2
	>36	Unweathered bedrock	---	---	---	---	---	---	---	
Du:										
Dunning	0-12	Silty clay loam	CL	A-6	0	0	90-100	85-100	80-95	7
	12-60	Silty clay, clay, silty clay loam	CH, CL	A-7	---	0-5	75-100	60-100	55-95	5
Dv:										
Dunning	0-12	Silt loam	CL-ML, CL	A-4	0	0-3	90-100	80-100	75-95	6
	12-60	Silty clay, clay, silty clay loam	CH, CL	A-7	---	0-5	90-100	80-100	75-95	6

Table 14.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--			
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	
	In				Pct	Pct				
EtB, EtC:										
Etowah----------	0-14	Loam	CL-ML, ML, SM, SC-SM	A-4	0	0	90-100	80-100	65-85	4
	14-24	Silty clay loam, clay loam, silt loam	CL	A-6	0	0	90-100	80-100	75-95	7
	24-60	Silty clay loam, clay loam	CL	A-6, A-7	0	0	90-100	80-100	75-95	7
FuC2, FuD2, FuE2:										
Fullerton-------	0-16	Gravelly silt loam	GC-GM, CL, CL-ML, GC	A-4	0	0-5	65-85	55-75	45-70	4
	16-60	Gravelly clay, gravelly silty clay	SM, GM, ML	A-7	0	0-10	60-85	55-75	50-70	4
HnB, HnC:										
Holston---------	0-18	Loam	SC-SM, CL-ML, ML, SM	A-4	0	0	90-100	80-100	65-85	4
	18-38	Clay loam, sandy clay loam	CL, SC-SM	A-4	0	0-5	90-100	80-100	75-95	4
	38-60	Clay loam, clay, gravelly clay loam	GC, CL, SC	A-7, A-2, A-6	0	0-15	60-100	55-100	50-100	3
JcD:										
Junaluska-------	0-3	Silt loam	CL-ML, CL	A-4	0	0-5	90-100	80-100	75-95	6
	3-29	Channery silty clay loam, silty clay loam, loam	CL, SC	A-6	0	0-10	75-100	60-100	45-95	3
	29-60	Weathered bedrock	---	---	---	---	---	---	---	

Table 14.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
JcD:									
Cataska	0-2	Channery silt loam	GC-GM, CL-ML	A-4	0-2	3-15	55-80	55-75	45-70
	2-12	Very channery silt loam, extremely channery silt loam	GC, GC-GM	A-2, A-1	0-2	10-25	15-50	10-50	10-40
	12-40	Weathered bedrock	---	---	---	---	---	---	---
	>40	Unweathered bedrock	---	---	---	---	---	---	---
LeB:									
Leadvale	0-9	Silt loam	CL-ML, CL	A-4	0	0	90-100	80-100	75-95
	9-31	Silt loam, silty clay loam	ML, CL-ML, CL	A-6, A-4	0	0	90-100	80-100	75-95
	31-55	Clay, silty clay, silty clay loam	CL	A-7, A-6	0	0	90-100	80-100	75-95
	55-62	Bedrock	---	---	---	---	---	---	---
LnB, LnC, LnD:									
Lonon	0-13	Gravelly loam	ML, SM	A-4	0-1	0-5	65-85	55-75	50-65
	13-60	Gravelly loam, gravelly clay loam, clay loam	CL, SC	A-4, A-6	0-5	0-10	70-100	60-90	50-80
LsC, LsD:									
Lostcove	0-8	Very cobbly loam	GM, SC, SC-SM, SM	A-4, A-2	0-5	25-45	65-85	45-75	40-65
	8-31	Very gravelly clay loam, very cobbly clay loam, very gravelly loam	GC-GM, GC, SC-SM, SC	A-6, A-2, A-4	0-5	10-60	50-80	35-70	30-65
	31-72	Very cobbly loam, extremely cobbly loam	SC, SC-SM, GC-GM, GC	A-2, A-4	0-10	30-60	35-75	25-65	20-55

Table 14.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--			
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	
	In				Pct	Pct				
MtC2, MtD2:										
Montevallo------	0-5	Channery silt loam	CL-ML, GC-GM	A-4	0-2	0-5	60-80	55-75	45-70	4
	5-17	Very channery silt loam, extremely channery loam	GC-GM, SC-SM, SC, GC	A-6, A-1-b, A-2, A-4	0	0-5	35-70	20-50	15-45	1
	17-38	Weathered bedrock	---	---	---	---	---	---	---	
	>38	Bedrock	---	---	---	---	---	---	---	
MuC2:										
Muse------------	0-14	Silt loam	ML, CL, CL-ML	A-6, A-4	0	0	80-100	70-100	60-100	5
	14-60	Clay, silty clay	CL	A-6, A-7	0	0	90-100	80-100	75-95	7
MwE:										
Muskingum-------	0-3	Channery loam	CL, ML, SC, SM	A-4	0	0-10	60-80	55-75	50-65	3
	3-29	Loam, channery silt loam, channery loam	CL	A-4	0	0-15	65-95	55-90	50-85	4
	29-40	Weathered bedrock	---	---	---	---	---	---	---	
Chiswell--------	0-2	Channery loam	SM, CL, ML, SC	A-4	0-2	2-10	60-80	55-75	50-65	3
	2-16	Very channery loam, extremely channery silt loam	GC, SC	A-2, A-6	0-2	0-20	30-65	20-50	15-45	1
	16-60	Weathered bedrock	---	---	---	---	---	---	---	
NnC3, NnD3, NnE3:										
Nonaburg--------	0-6	Channery silt loam	CL-ML, GC-GM	A-4	0-2	0-5	60-80	55-75	45-70	4
	6-14	Channery silty clay, silty clay	CH, CL	A-7	0	0-5	70-100	55-90	50-85	4
	14-41	Weathered bedrock	---	---	---	---	---	---	---	
	>41	Bedrock	---	---	---	---	---	---	---	

Table 14.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
NoF:									
Northcove-------	0-5	Stony sandy loam	SM, SC-SM	A-1-b, A-2-4	15-25	5-15	75-90	65-85	40-60
	5-40	Very cobbly sandy loam, very cobbly loam, very flaggy loam	GC-GM, GM, SC-SM, SM	A-2-4, A-4, A-1-b	5-15	20-60	60-90	50-85	30-70
	40-72	Extremely cobbly sandy loam, extremely cobbly fine sandy loam, very cobbly loam	GC-GM, GM, SM	A-2-4, A-1-b	10-20	25-65	50-85	35-60	20-50
Po:									
Pope------------	0-4	Sandy loam	SM, SC-SM	A-4, A-2	0	0	85-100	80-100	50-70
	4-32	Cobbly sandy loam, sandy loam, fine sandy loam	SM, SC-SM, ML, CL-ML	A-2, A-4	0-5	0-30	75-100	65-95	40-80
	32-60	Cobbly loamy sand, loamy sand	SM, SC-SM	A-1, A-2	0-5	0-30	75-100	65-95	40-70
Ro:									
Rosman----------	0-19	Sandy loam	SM, SC-SM	A-4, A-2	0	0	90-100	85-100	55-70
	19-49	Sandy loam, fine sandy loam, loam	SC-SM, ML, SM	A-4, A-2-4	0	0	90-100	85-100	50-90
	49-64	Loamy sand, gravelly loamy sand	SM, SC-SM	A-1, A-2-4	0	0-5	70-100	60-95	45-70
Sb:									
Sequatchie------	0-17	Loam	CL, CL-ML, ML	A-4	0	0-5	85-100	80-100	65-95
	17-51	Clay loam, loam, fine sandy loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	80-100	60-95
	51-62	Sandy loam, loam, fine sandy loam	SM, ML, CL-ML, CL	A-4, A-2	0	0-10	85-100	80-95	50-80

Table 14.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
ShB, ShC:									
Shelocta--------	0-10	Silt loam	CL-ML, ML	A-4	0-2	0-5	85-100	80-95	70-90
	10-48	Silty clay loam, channery silty clay loam	CL	A-6	0-5	0-5	70-95	60-90	55-90
	48-60	Channery silt loam, channery silty clay loam, channery loam	CL, GC	A-4, A-6	0-5	0-5	65-85	55-75	50-70
SoD:									
Soco------------	0-2	Loam	ML, CL-ML	A-4	0-2	0-5	85-100	80-100	65-90
	2-34	Loam, sandy loam, fine sandy loam	SM, CL-ML, ML	A-4	0-2	0-5	85-100	80-100	50-90
	34-50	Weathered bedrock	---	---	---	---	---	---	---
SoE:									
Soco------------	0-2	Loam	CL-ML, ML	A-4	0-2	0-5	85-100	80-100	65-90
	2-34	Loam, sandy loam, fine sandy loam	ML, SM, CL-ML	A-4	0-2	0-5	85-100	80-100	50-90
	34-50	Weathered bedrock	---	---	---	---	---	---	---
Cataska---------	0-2	Channery silt loam	CL-ML, GC-GM	A-4	0-2	3-15	55-80	55-75	45-70
	2-12	Very channery silt loam, extremely channery silt loam	GC-GM, GC	A-1, A-2	0-2	10-25	15-50	10-50	10-40
	12-40	Weathered bedrock	---	---	---	---	---	---	---
	>40	Unweathered bedrock	---	---	---	---	---	---	---
St:									
Staser----------	0-36	Loam	ML, CL-ML, CL	A-6, A-4	0	0	90-100	80-100	65-90
	36-72	Loam, fine sandy loam, silt loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-5	90-100	80-100	60-95

Table 14.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--			
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	
	In				Pct	Pct				
Su:										
Steadman--------	0-9	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0	90-100	80-100	75-95	6
	9-60	Silt loam, silty clay loam, very fine sandy loam	CL-ML, CL	A-4, A-6	0	0	90-100	80-100	75-95	6
TaD2, TaE2:										
Talbott---------	0-6	Silty clay loam	CL	A-6, A-7	0	0-5	95-100	90-100	85-95	8
	6-32	Clay, silty clay	CH, CL	A-7	0	0-10	95-100	90-100	85-95	7
	>32	Unweathered bedrock	---	---	---	---	---	---	---	
Rock outcrop.										
ToB2, ToC2, ToD2: ToE2:										
Townley--------	0-5	Silt loam	CL, CL-ML, ML	A-4	0	0-2	85-100	80-100	75-95	6
	5-30	Clay, silty clay, silty clay loam	CL, CH	A-7	0	0-2	85-100	80-100	70-95	6
	30-50	Weathered bedrock	---	---	---	---	---	---	---	
UdE:										
Unicoi----------	0-2	Very gravelly sandy loam	GM, SM, GC-GM, SC-SM	A-2, A-1-b	0	0-10	65-85	55-75	35-55	1
	2-12	Very gravelly sandy loam, very gravelly loam, very cobbly sandy loam	SM, GC-GM, GM, SC-SM	A-2, A-1-b	0-10	5-50	60-75	40-65	30-50	2
	>12	Unweathered bedrock	---	---	---	---	---	---	---	

Table 14.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
UdE:									
Ditney----------	0-9	Sandy loam	SC-SM, SM	A-4, A-2-4	0	0-6	90-100	80-95	50-70
	9-29	Loam, sandy loam, fine sandy loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0-5	90-100	80-95	50-80
	29-36	Loam, sandy loam, cobbly loam	CL-ML, SM, SC-SM, ML	A-2-4, A-4	0	15-30	65-100	60-90	45-75
	>36	Unweathered bedrock	---	---	---	---	---	---	---
Rock outcrop.									
UnE:									
Unicoi----------	0-2	Very gravelly sandy loam	SC-SM, SM, GM, GC-GM	A-2, A-1-b	0	0-10	65-85	55-75	35-55
	2-12	Very gravelly sandy loam, very gravelly loam, very cobbly sandy loam	SM, SC-SM, GC-GM, GM	A-2, A-1-b	0-10	5-50	60-75	40-65	30-50
	>12	Unweathered bedrock	---	---	---	---	---	---	---
Rock outcrop.									
Ur.									
Urban land									
W.									
Water									
WaB2, WaC2, WaD2:									
Waynesboro------	0-9	Loam	CL, CL-ML, ML	A-4	0	0-5	85-100	80-100	70-95
	9-72	Clay, sandy clay, clay loam	CL	A-7, A-6	0	0-5	90-100	80-100	70-95

Table 14.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--		
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40
	In				Pct	Pct			
Wf:									
Whitesburg------	0-4	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	85-100	80-100	75-95
	4-53	Silty clay loam, silt loam, clay loam	CL	A-6	0	0	90-100	80-100	75-95
	53-60	Weathered bedrock	---	---	---	---	---	---	---

Table 15.—Selected Physical and Chemical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Soil reaction	Organic matter	Erosion factors		
									Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	pH	Pct			
BrB2, BrC2, BrD2:											
Braddock	0-5	7-27	1.20-1.50	0.6-6	0.14-0.19	0.0-2.9	3.6-5.5	1.0-2.0	.32	.32	5
	5-60	35-55	1.20-1.50	0.6-2	0.12-0.17	3.0-5.9	3.6-5.5	0.0-0.5	.24	.28	
CaD, CaE:											
Cataska	0-2	5-27	1.30-1.40	2-6	0.10-0.14	0.0-2.9	3.6-5.5	1.0-3.0	.20	.32	2
	2-12	5-27	1.30-1.45	2-20	0.04-0.09	0.0-2.9	3.6-5.5	0.5-2.0	.15	.32	
	12-40	---	---	0.01-2	0.00-0.01	---	---	---	---	---	
	>40	---	---	0.01-2	0.00-0.01	---	---	---	---	---	
CcE:											
Cataska	0-2	5-27	1.30-1.40	2-6	0.10-0.14	0.0-2.9	3.6-5.5	1.0-3.0	.20	.32	2
	2-12	5-27	1.30-1.45	2-20	0.04-0.09	0.0-2.9	3.6-5.5	0.5-2.0	.15	.32	
	12-40	---	---	0.01-2	0.00-0.01	---	---	---	---	---	
	>40	---	---	0.01-2	0.00-0.01	---	---	---	---	---	
Sylco	0-2	5-27	1.30-1.40	2-6	0.10-0.14	0.0-2.9	3.6-5.5	1.0-3.0	.20	.32	2
	2-25	5-27	1.30-1.45	2-6	0.04-0.09	0.0-2.9	3.6-5.5	0.5-2.0	.15	.32	
	25-33	---	---	0.01-2	0.00-0.01	---	---	---	---	---	
	>33	---	---	0.00-0.01	0.00-0.00	---	---	---	---	---	
Co:											
Combs	0-11	7-27	1.20-1.50	0.6-6	0.12-0.20	0.0-2.9	5.6-7.3	1.0-5.0	.24	.24	5
	11-62	5-18	1.20-1.50	2-6	0.12-0.20	0.0-2.9	5.6-7.3	0.5-2.0	.28	.32	
DcB2, DcC2, DcD2:											
Decatur	0-8	12-27	1.25-1.55	0.6-6	0.12-0.17	0.0-2.9	4.5-6.0	0.5-2.0	.32	.32	5
	8-60	35-60	1.20-1.55	0.6-2	0.14-0.17	3.0-5.9	4.5-6.0	---	.28	.28	
DeB2, DeC2, DeD2:											
Dewey	0-8	12-27	1.25-1.55	0.6-6	0.12-0.17	0.0-2.9	4.5-6.0	0.5-2.0	.32	.32	5
	8-20	27-40	1.45-1.55	0.6-2	0.12-0.18	3.0-5.9	4.5-5.5	0.0-0.5	.24	.24	
	20-60	45-60	1.45-1.55	0.6-2	0.12-0.17	3.0-5.9	4.5-5.5	0.0-0.5	.24	.24	
DhD:											
Ditney	0-9	5-18	1.50-1.65	2-6	0.10-0.15	0.0-2.9	3.6-5.5	1.0-3.0	.24	.24	2
	9-29	5-18	1.50-1.65	2-6	0.10-0.15	0.0-2.9	3.6-5.5	1.0-3.0	.24	.24	
	29-36	5-18	1.50-1.65	2-6	0.05-0.13	0.0-2.9	3.6-5.5	1.0-3.0	.17	.24	
	>36	---	---	0.0-0.2	0.00-0.00	---	---	---	---	---	
Du:											
Dunning	0-12	27-40	1.20-1.40	0.6-2	0.19-0.23	0.0-2.9	5.6-7.8	2.0-10	.37	.37	5
	12-60	35-60	1.40-1.65	0.06-0.2	0.14-0.18	3.0-5.9	5.6-7.8	---	.28	.28	
Dv:											
Dunning	0-12	12-27	1.25-1.55	0.6-2	0.12-0.17	0.0-2.9	4.5-6.0	0.5-2.0	.32	.32	5
	12-60	35-60	1.40-1.65	0.06-0.2	0.14-0.18	3.0-5.9	5.6-7.8	---	.28	.28	
EtB, EtC:											
Etowah	0-14	7-27	1.20-1.50	0.6-6	0.12-0.20	0.0-2.9	5.6-7.3	1.0-5.0	.24	.24	5
	14-24	23-35	1.35-1.50	0.6-2	0.16-0.20	0.0-2.9	4.5-5.5	0.0-0.5	.32	.32	
	24-60	27-40	1.40-1.55	0.6-2	0.16-0.20	0.0-2.9	4.5-5.5	0.0-0.5	.32	.32	

Table 15.—Selected Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Soil reaction	Organic matter	Erosion factors		
									Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	pH	Pct			
FuC2, FuD2, FuE2:											
Fullerton	0-16	10-27	1.45-1.55	0.6-6	0.10-0.16	0.0-2.9	4.5-5.5	0.5-2.0	.28	.32	5
	16-60	40-60	1.45-1.55	0.6-2	0.10-0.14	3.0-5.9	4.5-5.5	---	.20	.24	
HnB, HnC:											
Holston	0-18	7-27	1.20-1.50	0.6-6	0.12-0.20	0.0-2.9	5.6-7.3	1.0-5.0	.24	.24	5
	18-38	20-35	1.40-1.55	0.6-2	0.13-0.20	0.0-2.9	4.5-5.5	0.0-0.5	.32	.32	
	38-60	27-45	1.40-1.60	0.6-2	0.10-0.18	0.0-2.9	4.5-5.5	0.0-0.5	.32	.32	
JcD:											
Junaluska	0-3	12-27	1.25-1.55	0.6-6	0.12-0.17	0.0-2.9	4.5-6.0	0.5-2.0	.32	.32	3
	3-29	18-35	1.30-1.65	0.6-2	0.12-0.18	0.0-2.9	3.6-6.0	0.5-1.0	.15	.24	
	29-60	---	---	0.01-2	0.00-0.01	---	---	---	---	---	
Cataska	0-2	5-27	1.30-1.40	2-6	0.10-0.14	0.0-2.9	3.6-5.5	1.0-3.0	.20	.32	2
	2-12	5-27	1.30-1.45	2-20	0.04-0.09	0.0-2.9	3.6-5.5	0.5-2.0	.15	.32	
	12-40	---	---	0.01-2	0.00-0.01	---	---	---	---	---	
	>40	---	---	0.01-2	0.00-0.01	---	---	---	---	---	
LeB:											
Leadville	0-9	12-27	1.25-1.55	0.6-2	0.12-0.17	0.0-2.9	4.5-5.5	1.0-4.0	.32	.32	4
	9-31	18-35	1.30-1.50	0.6-2	0.17-0.20	0.0-2.9	4.5-5.5	0.0-0.5	.43	.43	
	31-55	30-50	1.45-1.55	0.06-0.6	0.12-0.17	3.0-5.9	4.5-5.5	0.0-0.5	.24	.24	
	55-62	---	---	---	---	---	---	---	---	---	
LnB, LnC, LnD:											
Lonon	0-13	7-27	1.35-1.60	0.6-6	0.14-0.20	0.0-2.9	3.5-6.0	0.5-2.0	.24	.24	5
	13-60	18-35	1.30-1.50	0.6-2	0.09-0.15	0.0-2.9	3.5-6.0	0.0-0.5	.15	.24	
LsC, LsD:											
Lostcove	0-8	7-27	1.30-1.50	2-6	0.13-0.19	0.0-2.9	3.5-6.0	1.0-10	.10	.24	5
	8-31	18-35	1.30-1.65	0.6-2	0.04-0.09	0.0-2.9	3.5-6.0	0.0-1.0	.10	.28	
	31-72	7-27	1.30-1.65	2-6	0.13-0.19	---	3.5-6.0	0.0-1.0	.10	.24	
MtC2, MtD2:											
Montevallo	0-5	7-27	1.30-1.40	0.6-6	0.10-0.14	0.0-2.9	3.6-5.5	1.0-3.0	.20	.32	2
	5-17	7-27	1.25-1.50	0.6-2	0.02-0.12	0.0-2.9	4.5-6.0	0.0-0.5	.32	.32	
	17-38	---	---	---	---	---	---	---	---	---	
	>38	---	---	---	---	---	---	---	---	---	
MuC2:											
Muse	0-14	7-27	1.20-1.40	0.6-2	0.16-0.22	0.0-2.9	4.5-5.5	1.0-3.0	.37	.37	4
	14-60	40-60	1.45-1.55	0.06-0.2	0.12-0.17	3.0-5.9	4.5-5.5	0.0-0.5	.24	.24	
MwE:											
Muskingum	0-3	7-27	1.20-1.40	0.6-6	0.12-0.18	0.0-2.9	4.5-6.0	1.0-3.0	.37	.37	3
	3-29	18-27	1.20-1.50	0.6-2	0.08-0.14	0.0-2.9	4.5-5.5	0.0-0.5	.28	.32	
	29-40	---	---	---	---	---	---	---	---	---	
Chiswell	0-2	7-27	1.20-1.40	0.6-6	0.12-0.18	0.0-2.9	4.5-6.0	1.0-3.0	.37	.37	2
	2-16	18-27	1.20-1.60	0.6-2	0.04-0.10	0.0-2.9	3.6-6.0	0.0-0.5	.10	.17	
	16-60	---	---	---	---	---	---	---	---	---	

Table 15.—Selected Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Soil reaction	Organic matter	Erosion factors		
									Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	pH	Pct			
NnC3, NnD3, NnE3:											
Nonaburg	0-6	7-27	1.30-1.40	0.6-2	0.10-0.14	0.0-2.9	3.6-5.5	1.0-3.0	.20	.32	1
	6-14	35-60	1.55-1.65	0.2-0.6	0.09-0.14	3.0-5.9	6.1-7.8	0.0-0.5	.17	.24	
	14-41	---	---	---	---	---	---	---	---	---	
	>41	---	---	---	---	---	---	---	---	---	
NoF:											
Northcove	0-5	5-18	1.30-1.50	2-6	0.06-0.11	0.0-2.9	3.5-6.0	0.5-2.0	.10	.28	5
	5-40	5-27	1.40-1.60	2-6	0.06-0.11	0.0-2.9	3.5-6.0	0.0-1.0	.10	.28	
	40-72	5-18	1.40-1.60	2-6	0.03-0.05	0.0-2.9	3.5-6.0	0.0-0.5	.10	.17	
Po:											
Pope	0-4	5-18	1.20-1.40	2-6	0.10-0.16	0.0-2.9	3.6-5.5	1.0-4.0	.28	.28	5
	4-32	5-18	1.30-1.60	0.6-6	0.10-0.18	0.0-2.9	3.6-5.5	---	.28	.28	
	32-60	3-15	1.30-1.60	0.6-6	0.10-0.18	0.0-2.9	3.6-5.5	---	.28	.20	
Ro:											
Rosman	0-19	5-18	1.25-1.40	2-6	0.15-0.24	0.0-2.9	5.1-6.5	2.0-8.0	.28	.28	5
	19-49	5-18	1.25-1.50	2-6	0.10-0.18	0.0-2.9	5.1-6.5	0.5-2.0	.24	.24	
	49-64	1-15	1.35-1.60	6-20	0.02-0.10	0.0-2.9	5.1-6.5	0.0-0.5	.10	.17	
Sb:											
Sequatchie	0-17	10-25	1.50-1.65	0.6-6	0.12-0.18	0.0-2.9	4.5-5.5	1.0-3.0	.32	.32	5
	17-51	18-35	1.55-1.70	0.6-2	0.15-0.20	0.0-2.9	4.5-5.5	---	.24	.28	
	51-62	7-27	1.55-1.70	0.6-6	0.09-0.14	0.0-2.9	4.5-5.5	---	.24	.24	
ShB, ShC:											
Shelocta	0-10	10-25	1.15-1.30	0.6-6	0.16-0.22	0.0-2.9	4.5-5.5	0.5-5.0	.32	.32	3
	10-48	27-35	1.30-1.55	0.6-2	0.10-0.20	0.0-2.9	4.5-5.5	0.5-2.0	.28	.32	
	48-60	15-34	1.30-1.55	0.6-6	0.08-0.16	0.0-2.9	4.5-5.5	0.0-0.5	.17	.28	
SoD:											
Soco	0-2	7-25	1.35-1.60	2-6	0.14-0.22	0.0-2.9	3.5-5.5	1.0-8.0	.28	.28	3
	2-34	5-18	1.35-1.60	2-6	0.12-0.20	0.0-2.9	3.5-5.5	0.5-1.0	.32	.32	
	34-50	---	---	0.2-0.6	0.00-0.01	---	---	---	---	---	
SoE:											
Soco	0-2	7-25	1.35-1.60	2-6	0.14-0.22	0.0-2.9	3.5-5.5	1.0-8.0	.28	.28	3
	2-34	5-18	1.35-1.60	2-6	0.12-0.20	0.0-2.9	3.5-5.5	0.5-1.0	.32	.32	
	34-50	---	---	0.2-0.6	0.00-0.01	---	---	---	---	---	
Cataska	0-2	5-27	1.30-1.40	2-6	0.10-0.14	0.0-2.9	3.6-5.5	1.0-3.0	.20	.32	2
	2-12	5-27	1.30-1.45	2-20	0.04-0.09	0.0-2.9	3.6-5.5	0.5-2.0	.15	.32	
	12-40	---	---	0.01-2	0.00-0.01	---	---	---	---	---	
	>40	---	---	0.01-2	0.00-0.01	---	---	---	---	---	
St:											
Staser	0-36	7-27	1.40-1.60	0.6-2	0.15-0.22	0.0-2.9	5.6-7.3	2.0-4.0	.32	.32	5
	36-72	15-27	1.40-1.60	0.6-6	0.07-0.18	0.0-2.9	5.6-7.3	---	.28	.32	
Su:											
Steadman	0-9	10-27	1.20-1.40	0.6-2	0.20-0.26	0.0-2.9	5.1-7.8	2.0-4.0	.32	.32	5
	9-60	18-35	1.20-1.40	0.6-2	0.17-0.22	0.0-2.9	5.1-7.8	0.0-0.5	.37	.37	

Table 15.—Selected Physical and Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Soil reaction	Organic matter	Erosion factors		
									Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	pH	Pct			
TaD2, TaE2:											
Talbott	0-6	27-40	1.35-1.55	0.6-2	0.10-0.16	3.0-5.9	5.1-6.0	0.5-1.0	.32	.32	2
	6-32	40-60	1.40-1.60	0.2-0.6	0.10-0.14	3.0-5.9	5.1-6.0	0.5-1.0	.24	.24	
	>32	---	---	---	---	---	---	---	---	---	
Rock outcrop.											
ToB2, ToC2:											
Townley	0-5	10-27	1.30-1.60	0.6-2	0.12-0.14	0.0-2.9	3.6-5.5	0.5-2.0	.37	.37	3
	5-30	35-60	1.30-1.60	0.06-0.2	0.12-0.18	3.0-5.9	3.6-5.5	0.0-0.5	.28	.32	
	30-50	---	---	---	---	---	---	---	---	---	
ToD2, ToE2:											
Townley	0-5	10-27	1.30-1.60	0.6-2	0.12-0.14	0.0-2.9	4.5-5.5	0.5-2.0	.37	.37	3
	5-30	35-60	1.30-1.60	0.06-0.2	0.12-0.18	3.0-5.9	4.5-5.5	0.0-0.5	.28	.32	
	30-50	---	---	---	---	---	---	---	---	---	
UdE:											
Unicoi	0-2	5-18	1.45-1.55	2-6	0.06-0.09	0.0-2.9	3.6-5.5	0.5-2.0	.15	.24	1
	2-12	5-20	1.45-1.60	2-6	0.04-0.09	0.0-2.9	3.6-5.5	0.5-2.0	.15	.24	
	>12	---	---	0.0-0.2	0.00-0.00	---	---	---	---	---	
Ditney	0-9	5-18	1.50-1.65	2-6	0.10-0.15	0.0-2.9	3.6-5.5	1.0-3.0	.24	.24	2
	9-29	5-18	1.50-1.65	2-6	0.10-0.15	0.0-2.9	3.6-5.5	1.0-3.0	.24	.24	
	29-36	5-18	1.50-1.65	2-6	0.05-0.13	0.0-2.9	3.6-5.5	1.0-3.0	.17	.24	
	>36	---	---	0.0-0.2	0.00-0.00	---	---	---	---	---	
Rock outcrop.											
UnE:											
Unicoi	0-2	5-18	1.45-1.55	2-6	0.06-0.09	0.0-2.9	3.6-5.5	0.5-2.0	.15	.24	1
	2-12	5-20	1.45-1.60	2-6	0.04-0.09	0.0-2.9	3.6-5.5	0.5-2.0	.15	.24	
	>12	---	---	0.0-0.2	0.00-0.00	---	---	---	---	---	
Rock outcrop.											
Ur.											
Urban land											
W.											
Water											
WaB2, WaC2, WaD2:											
Waynesboro	0-9	7-27	1.40-1.55	0.6-6	0.15-0.21	0.0-2.9	4.5-5.5	0.5-2.0	.28	.28	5
	9-72	35-50	1.40-1.55	0.6-2	0.13-0.18	0.0-2.9	4.5-5.5	0.5-2.0	.28	.28	
Wf:											
Whitesburg	0-4	10-27	1.35-1.50	0.6-2	0.15-0.22	0.0-2.9	6.1-7.8	1.0-2.0	.37	.37	4
	4-53	25-35	1.35-1.50	0.6-2	0.15-0.20	0.0-2.9	6.1-7.8	0.5-1.0	.32	.32	
	53-60	---	---	---	---	---	---	---	---	---	

Table 16.—Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
BrB2, BrC2, BrD2:									
Braddock	B								
		Jan-Dec	---	---	---	---	None	---	None
CaD, CaE:									
Cataska	D								
		Jan-Dec	---	---	---	---	None	---	None
CcE:									
Cataska	D								
		Jan-Dec	---	---	---	---	None	---	None
Sylco	C								
		Jan-Dec	---	---	---	---	None	---	None
Co:									
Combs	B								
		January	---	---	---	---	None	Brief	Rare
		February	---	---	---	---	None	Brief	Rare
		March	---	---	---	---	None	Brief	Rare
		April	---	---	---	---	None	Brief	Rare
		May	---	---	---	---	None	Brief	Rare
		December	---	---	---	---	None	Brief	Rare
DcB2, DcC2, DcD2:									
Decatur	B								
		Jan-Dec	---	---	---	---	None	---	None
DeB2, DeC2, DeD2:									
Dewey	B								
		Jan-Dec	---	---	---	---	None	---	None
DhD:									
Ditney	C								
		Jan-Dec	---	---	---	---	None	---	None
Du:									
Dunning	D								
		January	0.0-0.5	>6.0	---	---	None	Brief	Occasional
		February	0.0-0.5	>6.0	---	---	None	Brief	Occasional
		March	0.0-0.5	>6.0	---	---	None	Brief	Occasional
		April	0.0-0.5	>6.0	---	---	None	Brief	Occasional
		May	0.0-0.5	>6.0	---	---	None	Brief	Occasional
		December	0.0-0.5	>6.0	---	---	None	Brief	Occasional
Dv:									
Dunning	D								
		January	0.0-1.0	>6.0	---	---	None	Brief	Occasional
		February	0.0-1.0	>6.0	---	---	None	Brief	Occasional
		March	0.0-1.0	>6.0	---	---	None	Brief	Occasional
		April	0.0-1.0	>6.0	---	---	None	Brief	Occasional
		May	0.0-1.0	<6.0	---	---	None	Brief	Occasional
		December	0.0-1.0	>6.0	---	---	None	Brief	Occasional

Table 16.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
EtB, EtC:									
Etowah	B								
		Jan-Dec	---	---	---	---	None	---	None
FuC2, FuD2, FuE2:									
Fullerton	B								
		Jan-Dec	---	---	---	---	None	---	None
HnB, HnC:									
Holston	B								
		Jan-Dec	---	---	---	---	None	---	None
JcD:									
Junaluska	B								
		Jan-Dec	---	---	---	---	None	---	None
Cataska	D								
		Jan-Dec	---	---	---	---	None	---	None
LeB:									
Leadvale	C								
		January	2.0-3.0	<6.0	---	---	None	---	None
		February	2.0-3.0	<6.0	---	---	None	---	None
		March	2.0-3.0	<6.0	---	---	None	---	None
		April	2.0-3.0	<6.0	---	---	None	---	None
LnB, LnC, LnD:									
Lonon	B								
		Jan-Dec	---	---	---	---	None	---	None
LsC, LsD:									
Lostcove	B								
		January	5.0-6.0	>6.0	---	---	None	---	None
		February	5.0-6.0	>6.0	---	---	None	---	None
		March	5.0-6.0	>6.0	---	---	None	---	None
		April	5.0-6.0	>6.0	---	---	None	---	None
		October	5.0-6.0	>6.0	---	---	None	---	None
		November	5.0-6.0	>6.0	---	---	None	---	None
		December	5.0-6.0	>6.0	---	---	None	---	None
MtC2, MtD2:									
Montevallo	D								
		Jan-Dec	---	---	---	---	None	---	None
MuC2:									
Muse	C								
		Jan-Dec	---	---	---	---	None	---	None
MwE:									
Muskingum	C								
		Jan-Dec	---	---	---	---	None	---	None
Chiswell	D								
		Jan-Dec	---	---	---	---	None	---	None

Table 16.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
NnC3, NnD3, NnE3:									
Nonaburg	D								
		Jan-Dec	---	---	---	---	None	---	None
NoF:									
Northcove	B								
		Jan-Dec	---	---	---	---	None	---	None
Po:									
Pope	B								
		January	---	---	---	---	None	---	Occasional
		February	---	---	---	---	None	---	Occasional
		March	---	---	---	---	None	---	Occasional
		April	---	---	---	---	None	---	Occasional
		November	---	---	---	---	None	---	Occasional
		December	---	---	---	---	None	---	Occasional
Ro:									
Rosman	B								
		January	4.0-5.0	>6.0	---	---	None	Very brief	Occasional
		February	4.0-5.0	>6.0	---	---	None	Very brief	Occasional
		March	4.0-5.0	>6.0	---	---	None	Very brief	Occasional
		April	4.0-5.0	>6.0	---	---	None	Very brief	Occasional
		December	4.0-5.0	>6.0	---	---	None	Very brief	Occasional
Sb:									
Sequatchie	B								
		January	---	---	---	---	None	Brief	Rare
		February	---	---	---	---	None	Brief	Rare
		March	---	---	---	---	None	Brief	Rare
		April	---	---	---	---	None	Brief	Rare
		May	---	---	---	---	None	Brief	Rare
		December	---	---	---	---	None	Brief	Rare
ShB, ShC:									
Shelocta	B								
		Jan-Dec	---	---	---	---	None	---	None
SoD:									
Soco	B								
		Jan-Dec	---	---	---	---	None	---	None
SoE:									
Soco	B								
		Jan-Dec	---	---	---	---	None	---	None
Cataska	D								
		Jan-Dec	---	---	---	---	None	---	None
St:									
Staser	B								
		January	3.0-4.0	>6.0	---	---	None	Very brief	Occasional
		February	3.0-4.0	>6.0	---	---	None	Very brief	Occasional
		March	3.0-4.0	>6.0	---	---	None	Very brief	Occasional
		December	3.0-4.0	>6.0	---	---	None	Very brief	Occasional

Table 16.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
Su:									
Steadman	C								
		January	2.0-3.0	>6.0	---	---	None	Brief	Occasional
		February	2.0-3.0	>6.0	---	---	None	Brief	Occasional
		March	2.0-3.0	>6.0	---	---	None	Brief	Occasional
		April	2.0-3.0	>6.0	---	---	None	Brief	Occasional
		December	2.0-3.0	>6.0	---	---	None	Brief	Occasional
TaD2, TaE2:									
Talbott	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
ToB2, ToC2, ToD2, ToE2:									
Townley	C								
		Jan-Dec	---	---	---	---	None	---	None
UdE:									
Unicoi	C								
		Jan-Dec	---	---	---	---	None	---	None
Ditney	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
UnE:									
Unicoi	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
Ur.									
Urban land									
W.									
Water									
WaB2, WaC2, WaD2:									
Waynesboro	B								
		Jan-Dec	---	---	---	---	None	---	None
Wf:									
Whitesburg	C								
		January	2.0-4.0	>6.0	---	---	None	---	Occasional
		February	2.0-4.0	>6.0	---	---	None	---	Occasional
		March	2.0-4.0	>6.0	---	---	None	---	Occasional
		December	2.0-4.0	>6.0	---	---	None	---	Occasional

Table 17.—Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
BrB2, BrC2, BrD2:							
Braddock	---	---	---	---	Moderate	High	Moderate
CaD, CaE:							
Cataska	Bedrock (paralithic)	10-20	---	Moderately cemented	Moderate	Low	Moderate
CcE:							
Cataska	Bedrock (paralithic)	10-20	---	Moderately cemented	Moderate	Low	Moderate
Sylco	Bedrock (lithic)	20-40	---	Very strongly cemented	Moderate	Low	Moderate
Co:							
Combs	---	---	---	---	None	Low	Low
DcB2, DcC2, DcD2:							
Decatur	---	---	---	---	---	High	Moderate
DeB2, DeC2, DeD2:							
Dewey	---	---	---	---	---	High	Moderate
DhD:							
Ditney	Bedrock (lithic)	20-40	---	Very strongly cemented	Moderate	Low	Moderate
Du, Dv:							
Dunning	---	---	---	---	None	High	Moderate
EtB, EtC:							
Etowah	---	---	---	---	---	Low	Moderate
FuC2, FuD2, FuE2:							
Fullerton	---	---	---	---	---	High	Moderate
HnB, HnC:							
Holston	---	---	---	---	---	Moderate	High
JcD:							
Junaluska	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	High
Cataska	Bedrock (paralithic)	10-20	---	Moderately cemented	Moderate	Low	Moderate
LeB:							
Leadvale	Bedrock (paralithic)	48-48	---	Moderately cemented	---	Moderate	Moderate
LnB, LnC, LnD:							
Lonon	---	---	---	---	Moderate	Low	High

Table 17.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
LsC, LsD:							
Lostcove	---	---	---	---	Moderate	Low	High
MtC2, MtD2:							
Montevallo	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Moderate	Moderate
MuC2:							
Muse	---	---	---	---	---	High	High
MwE:							
Muskingum	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Low	High
Chiswell	Bedrock (paralithic)	10-20	---	Moderately cemented	None	Moderate	Moderate
NnC3, NnD3, NnE3:							
Nonaburg	Bedrock (paralithic)	8-20	---	Very strongly cemented	None	High	Low
NoF:							
Northcove	---	---	---	---	Low	Low	High
Po:							
Pope	---	---	---	---	Moderate	Low	High
Ro:							
Rosman	---	---	---	---	Moderate	Moderate	Moderate
Sb:							
Sequatchie	---	---	---	---	---	Low	Moderate
ShB, ShC:							
Shelocta	---	---	---	---	None	Low	High
SoD:							
Soco	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	High
SoE:							
Soco	Bedrock (paralithic)	20-40	---	Moderately cemented	Moderate	Moderate	High
Cataska	Bedrock (paralithic)	10-20	---	Moderately cemented	Moderate	Low	Moderate
St:							
Staser	---	---	---	---	---	Low	Low
Su:							
Steadman	---	---	---	---	High	Moderate	Low
TaD2, TaE2:							
Talbott	Bedrock (lithic)	20-40	---	Very strongly cemented	---	High	Moderate
Rock outcrop.							

Table 17.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
ToB2, ToC2:							
Townley	Bedrock (paralithic)	20-40	---	Moderately cemented	None	Moderate	High
ToD2, ToE2:							
Townley	Bedrock (paralithic)	20-40	---	Moderately cemented	---	Moderate	High
UdE:							
Unicoi	Bedrock (lithic)	7-20	---	Very strongly cemented	Moderate	Low	Moderate
Ditney	Bedrock (lithic)	20-40	---	Very strongly cemented	Moderate	Low	Moderate
Rock outcrop.							
UnE:							
Unicoi	Bedrock (lithic)	7-20	---	Very strongly cemented	Moderate	Low	Moderate
Rock outcrop.							
Ur.							
Urban land							
W.							
Water							
WaB2, WaC2, WaD2:							
Waynesboro	---	---	---	---	---	High	High
Wf:							
Whitesburg	Bedrock (paralithic)	40-60	---	Moderately cemented	---	High	Low

Table 18.—Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
*Braddock	Clayey, kaolinitic, mesic Typic Hapludults
Cataska	Loamy-skeletal, mixed, mesic, shallow Typic Dystrochrepts
Chiswell	Loamy-skeletal, mixed, mesic, shallow Typic Dystrochrepts
Combs	Coarse-loamy, mixed, mesic Fluventic Hapludolls
Decatur	Clayey, kaolinitic, thermic Rhodic Paleudults
Dewey	Clayey, kaolinitic, thermic Typic Paleudults
Ditney	Coarse-loamy, mixed, mesic Typic Dystrochrepts
Dunning	Fine, mixed, mesic Fluvaquentic Endoaquolls
Etowah	Fine-loamy, siliceous, thermic Typic Paleudults
Fullerton	Clayey, kaolinitic, thermic Typic Paleudults
Holston	Fine-loamy, siliceous, thermic Typic Paleudults
Junaluska	Fine-loamy, mixed, mesic Typic Hapludults
Leadvale	Fine-silty, siliceous, thermic Typic Fragiudults
Lonon	Fine-loamy, mixed, mesic Typic Hapludults
*Lostcove	Loamy-skeletal, mixed, mesic Typic Hapludults
Montevallo	Loamy-skeletal, mixed, thermic, shallow Typic Dystrochrepts
Muse	Clayey, mixed, mesic Typic Hapludults
Muskingum	Fine-loamy, mixed, mesic Typic Dystrochrepts
Nonaburg	Clayey, mixed, thermic, shallow Ochreptic Hapludalfs
Northcove	Loamy-skeletal, mixed, mesic Typic Dystrochrepts
Pope	Coarse-loamy, mixed, mesic Fluventic Dystrochrepts
Rosman	Coarse-loamy, mixed, mesic Fluventic Haplumbrepts
Sequatchie	Fine-loamy, siliceous, thermic Humic Hapludults
Shelocta	Fine-loamy, mixed, mesic Typic Hapludults
Soco	Coarse-loamy, mixed, mesic Typic Dystrochrepts
Staser	Fine-loamy, mixed, thermic Cumulic Hapludolls
Steadman	Fine-silty, mixed, thermic Fluvaquentic Eutrochrepts
Sylco	Loamy-skeletal, mixed, mesic Typic Dystrochrepts
Talbott	Fine, mixed, thermic Typic Hapludalfs
Townley	Clayey, mixed, thermic Typic Hapludults
Unicoi	Loamy-skeletal, mixed, mesic Lithic Dystrochrepts
Waynesboro	Clayey, kaolinitic, thermic Typic Paleudults
Whitesburg	Fine-loamy, siliceous, mesic Aquic Dystric Eutrochrepts

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83°40'00"

83°20'00"

36°00'00"

35°50'00"

LEGEND

- 1 Decatur-Dewey-Fullerton
- 2 Nonaburg-Steadman-Whitesburg
- 3 Townley-Talbott-Muskingum
- 4 Sequatchie-Staser-Combs
- 5 Braddock-Lostcove-Lonon
- 6 Cataska-Unicoi-Ditney
- 7 Unicoi-Northcove-Ditney
- 8 Cataska-Junaluska-Sylco
- 9 Waynesboro-Holston-Dunning

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TENNESSEE AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP
SEVIER COUNTY AREA, TENNESSEE

1 0 1 2 3
MILES

1 0 1 2 3 4 5 6
KILOMETERS

SCALE = 1:105000

N

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

INDEX TO MAP SHEETS
SEVIER COUNTY AREA, TENNESSEE

1 MASCOT
2 NEW MARKET
3 SHOOKS GAP
4 BOYDS CREEK
5 DOUGLAS DAM
6 SHADY GROVE
7 CHESTNUT HILL
8 WILDWOOD
9 WALDEN CREEK
10 PIGEON FORGE
11 RICHARDSON COVE
12 JONES COVE
13 WEAR COVE
14 GATLINBURG
15 MOUNT LE CONTE

83°40'00"
83°20'00"
36°00'00"
35°50'00"

Underwood
Kodak
Henry Crossroads
Union Grove
Douglas Lake
Bird Crossroad
Walnut Grove
Harrisburg
Cedar Bluff
East Fork
Crockettsville
Jones Cove
Richardson Cove
Caton Chapel
Pittman Center
Rocky Grove
Boyds Creek
Oak City
Shooks Gap
Trundle Crossroad
Newell Station
Cusick
Sevierville
Catlettsburg
Williamsburg
Pigeon Forge
McCookville
Cornpone
Wear Valley
Gatlinburg

JEFFERSON COUNTY
KNOX COUNTY
BLOUNT COUNTY
COCKE COUNTY

N

SCALE = 1:105000

LEGEND

er. Map symbols consist of letters or a combination of letters and
of the series name (or the name of the higher classification or
third letter is capitalized and indicates the class of slope.

NAME

slopes, eroded
t slopes, eroded
ent slopes, eroded
2 to 25 percent slopes
5 to 80 percent slopes
80 percent slopes

nt slopes, eroded
ent slopes, eroded
cent slopes, eroded
t slopes, eroded
ent slopes, eroded
ent slopes, eroded
ercent slopes
ionally flooded
occasionally flooded
lopes
slopes
o 12 percent slopes, eroded
to 25 percent slopes, eroded
to 60 percent slopes, eroded
opes
slopes
2 to 25 percent slopes
ent slopes
rcent slopes
ercent slopes
percent slopes
to 12 percent slopes, extremely bouldery
2 to 25 percent slopes, extremely bouldery
5 to 12 percent slopes, eroded
12 to 25 percent slopes, eroded
t slopes, eroded
25 to 60 percent slopes
5 to 12 percent slopes, severely eroded, rocky
12 to 25 percent slopes, severely eroded, rocky
25 to 60 percent slopes, severely eroded, rocky
35 to 50 percent slopes, bouldery
y flooded
ally flooded
d
ent slopes
cent slopes
lopes
80 percent slopes, eroded
ded
lly flooded
10 to 25 percent slopes, eroded
25 to 60 percent slopes, eroded
ent slopes, eroded
cent slopes, eroded
rcent slopes, eroded
rcent slopes, eroded
mplex, 30 to 80 percent slopes
30 to 80 percent slopes

ent slopes, eroded
cent slopes, eroded
ercent slopes, eroded
ally flooded

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- National, state, or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park, and large airport)
- Land grant
- Limit of soil survey (label)
- Field sheet matchline and neatline

AD HOC BOUNDARY (label)
- Small airport, airfield, park, oilfield, cemetery, or flood pool (FLOOD, POOL, LINE)

STATE COORDINATE TICK
1 890 000 FEET

LAND DIVISION CORNER
(sections and land grants)

ROADS

- Divided (median shown if scale permits)
- Other roads
- Trail

ROAD EMBLEM AND DESIGNATIONS

- Interstate (173)
- Federal (287)
- State (52)
- County, farm or ranch (1283)

RAILROAD

POWER TRANSMISSION LINE

PIPELINE

FENCE

LEVEES

- Without road
- With road
- With railroad

DAMS

- Large (to scale)
- Medium or Small (Named where applicable) (water, w)

PITS

- Gravel pit
- Mine or quarry

CULTURAL FEATURES

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (occupied)
- Church
- School
- Indian mound (label) (Indian Mound)
- Located object (label) (Tower)
- Tank (label) (Gas)
- Wells, oil or gas
- Windmill
- Kitchen midden

WATER FEATURES

DRAINAGE

- Perennial drain, double line
- Perennial drain, single line — Label only
- Intermittent drain — Label only
- Drainage end — Label only
- Canals or ditches — Label only
- Double-line (label) (CANAL)
- Drainage and/or irrigation — Label only

LAKES, PONDS AND RESERVOIRS

- Perennial (water, w)
- Intermittent (int, i)

MISCELLANEOUS WATER FEATURES

- Marsh or swamp
- Spring
- Well, artesian
- Well, irrigation
- Wet spot

SPECIAL SYMBOLS FOR SOIL SURVEY

SOIL DELINEATIONS AND SYMBOLS (BrB2, DcB2)

- Bedrock escarpment (points downslope)
- Other than bedrock escarpment (points downslope)
- Short steep slope
- Gully
- Depression or sink
- Soil sample

MISCELLANEOUS

- Blowout
- Clay spot
- Gravelly spot
- Gumbo, slick or scabby spot (sodic)
- Dumps and other similar nonsoil areas
- Prominent hill or peak
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip (tips point upslope)
- Stony spot, very stony spot

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SEVIER COUNTY AREA, TENNESSEE
MASCOT QUADRANGLE
SHEET NUMBER 1 OF 15

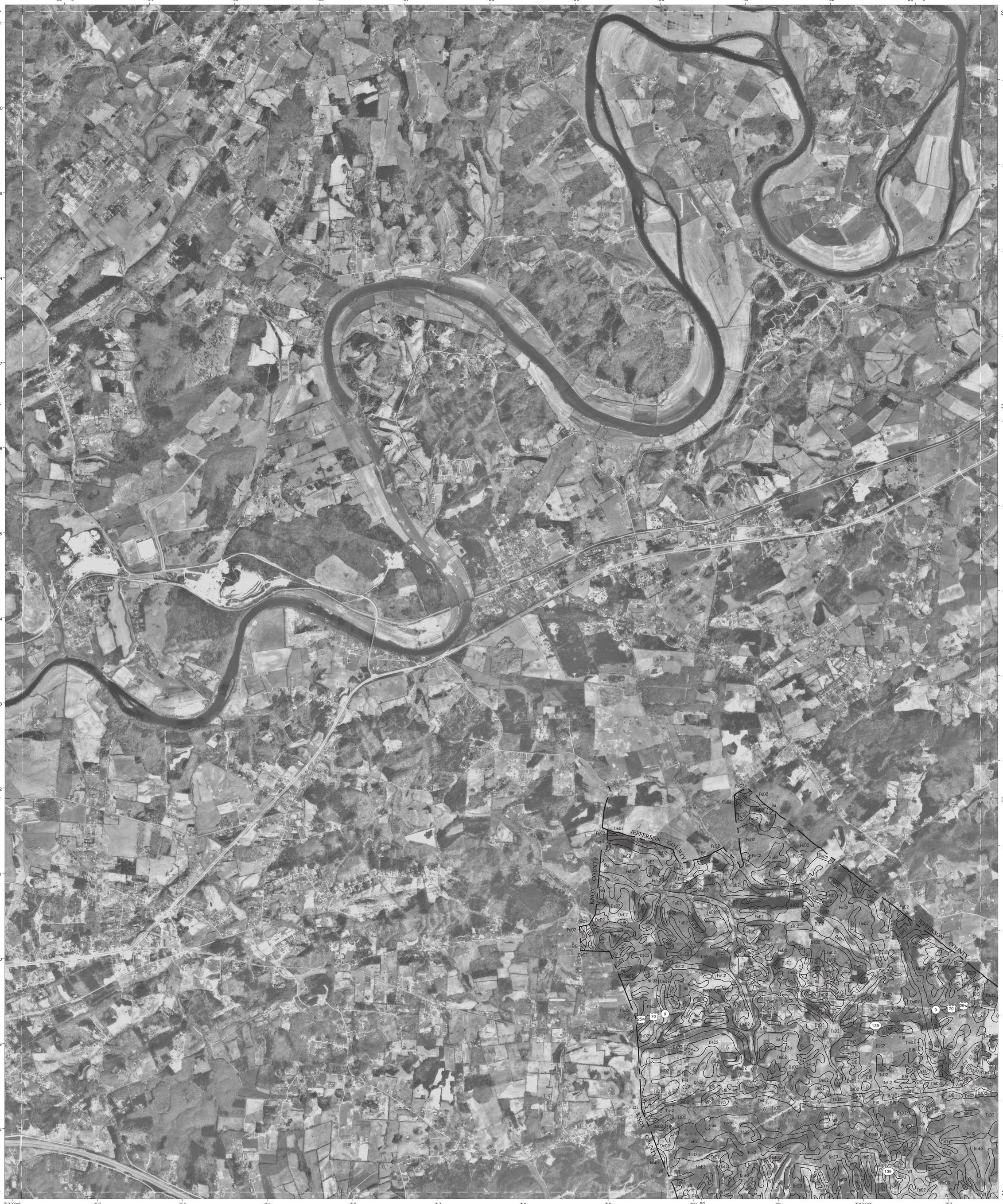
83° 45′ 00″ — 83° 42′ 30″ — 83° 40′ 00″ — 83° 37′ 30″

36° 07′ 30″ — 36° 05′ 00″ — 36° 02′ 30″ — 36° 00′ 00″

252 000m E — 253 — 254 — 255 — 256 — 257 — 258 — 259 — 260 — 261 — 262 000m E — 263

4001 — 4000 — 3999 — 3998 000m N — 3997 — 3996 — 3995 — 3994 — 3993 — 3992 — 3991 — 3990 — 3989 — 3988 000m N

3999 — 3998 — 3997 000m N — 3996 — 3995 — 3994 — 3993 — 3992 — 3991 — 3990 — 3989 — 3988 — 3987 000m N



Joins sheet 2, New Market

Joins sheet 3, Shooks Gap

Joins sheet 4, Boyds Creek

Joins sheet 5, Douglas Dam

SCALE 1:24000

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

		2
3	4	5

2 NEW MARKET
3 SHOOKS GAP
4 BOYDS CREEK
5 DOUGLAS DAM

INDEX TO ADJOINING 7.5 MAPS

MASCOT, TENNESSEE

7.5 MINUTE SERIES
SHEET NUMBER 1 OF 15

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SEVIER COUNTY AREA, TENNESSEE
PIGEON FORGE QUADRANGLE
SHEET NUMBER 10 OF 15

Joins sheet 4, Boyds Creek
Joins sheet 5, Douglas Dam
Joins sheet 6, Shady Grove
Joins sheet 9, Walden Creek
Joins sheet 11, Richardson Cove
Joins sheet 13, Wear Cove
Joins sheet 14, Gatlinburg
Joins sheet 15, Mount Le Conte

83°37′30″ 83°35′00″ 83°32′30″ 83°30′00″
35°52′30″ 35°50′00″ 35°47′30″ 35°45′00″
263000mE 264 265 266 267 268 269 270 271 272 273000mE 274
3973 3972 3971 3970000mN 3969 3968 3967 3966 3965 3964 3963 3962 3961 3960000mN 3959000mN 3970 3969000mN 3968 3967 3966 3965 3964 3963 3962 3961 3960

SEVIERVILLE
Pigeon Forge
Davids Knob
Painters Knob
Sugar Camp Knob
Tilda High Top
Little Cove
Middle Creek
LITTLE PIGEON RIVER
PRONG
WEST PRONG
Middle Prong
Gists Creek
Dry Fork
Walden Creek
Mill Creek
Cove Creek
PINE MOUNTAIN
66
411
441
321

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000
FEET
1 0 1
KILOMETERS

4	5	6
9		11
13	14	15

4 BOYDS CREEK
5 DOUGLAS DAM
6 SHADY GROVE
9 WALDEN CREEK
11 RICHARDSON COVE
13 WEAR COVE
14 GATLINBURG
15 MOUNT LE CONTE

INDEX TO ADJOINING 7.5 MAPS

PIGEON FORGE, TENNESSEE

7.5 MINUTE SERIES
SHEET NUMBER 10 OF 15

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SEVIER COUNTY AREA, TENNESSEE
RICHARDSON COVE QUADRANGLE
SHEET NUMBER 11 OF 15

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

5	6	7
10		12
14	15	

5 DOUGLAS DAM
6 SHADY GROVE
7 CHESTNUT HILL
10 PIGEON FORGE
12 JONES COVE
14 GATLINBURG
15 MOUNT LE CONTE

INDEX TO ADJOINING 7.5 MAPS

RICHARDSON COVE, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 11 OF 15

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 6, Shady Grove

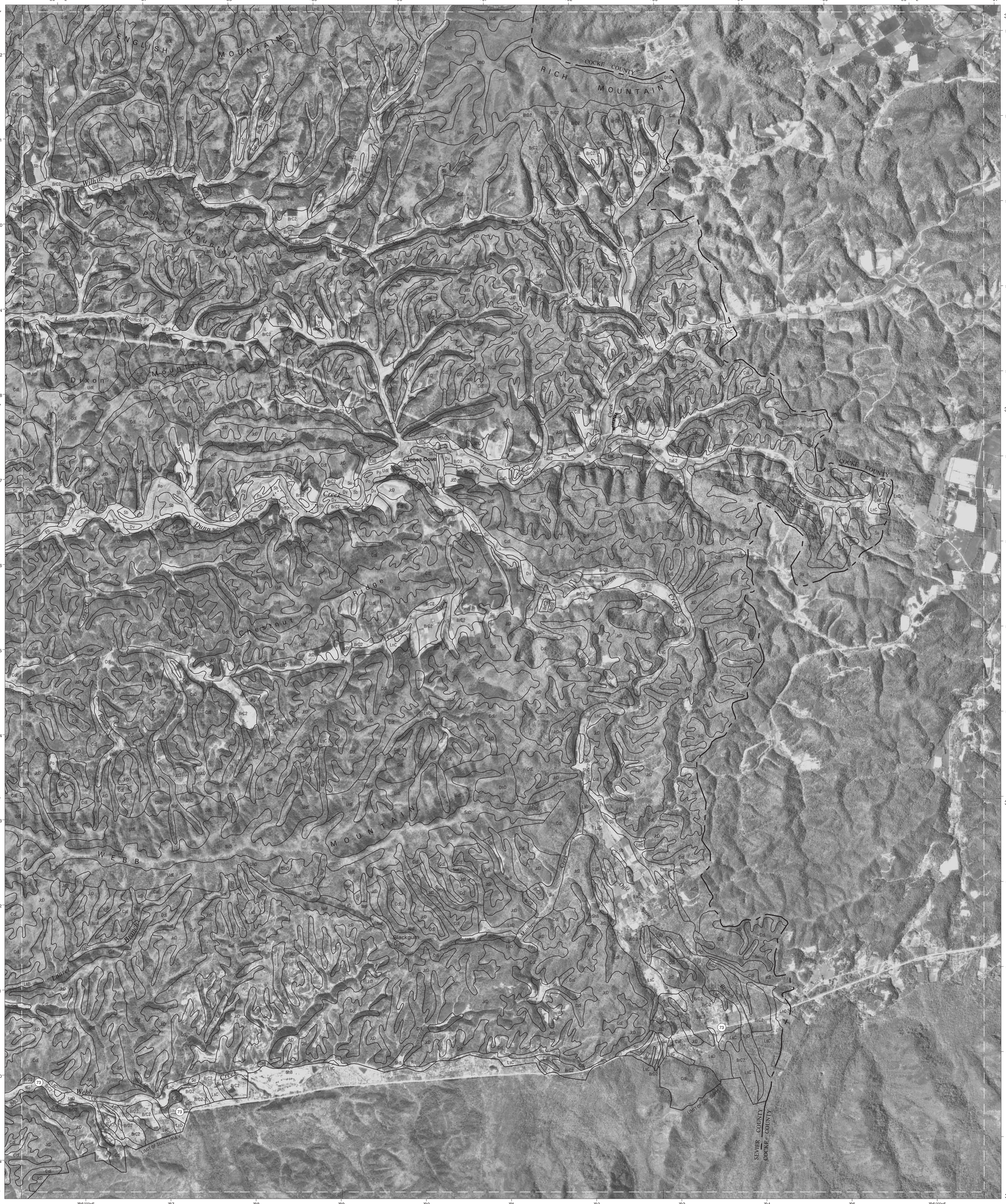
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SEVIER COUNTY AREA, TENNESSEE
JONES COVE QUADRANGLE
SHEET NUMBER 12 OF 15

Joins sheet 7, Chestnut Hill

Joins sheet 11, Richardson Cove

Joins sheet 15, Mount Le Conte



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

		6 SHADY GROVE
6	7	7 CHESTNUT HILL
11		11 RICHARDSON COVE
		15 MOUNT LE CONTE
15		

INDEX TO ADJOINING 7.5 MAPS

JONES COVE, TENNESSEE

7.5 MINUTE SERIES
SHEET NUMBER 12 OF 15

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

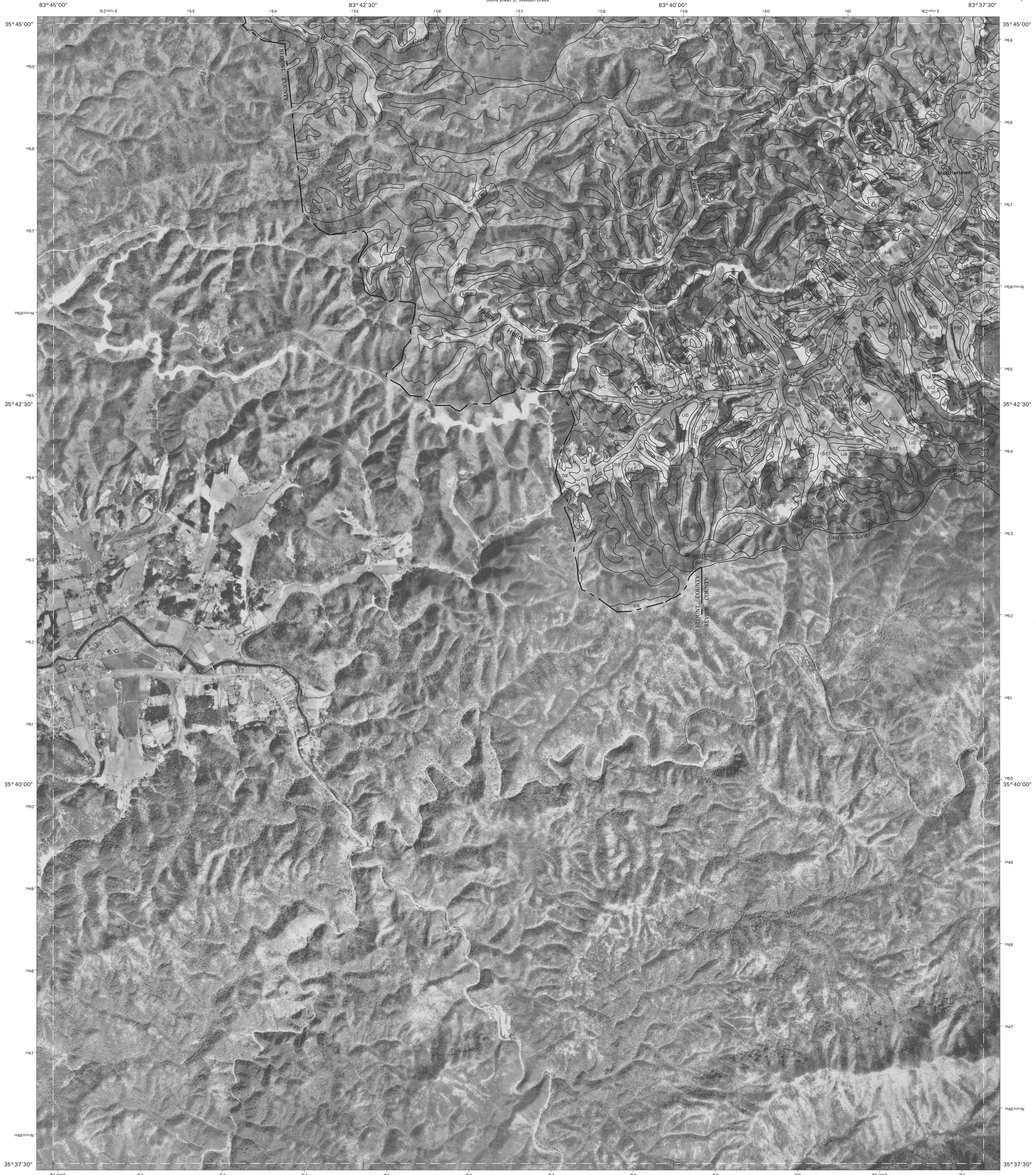
Joins sheet 8, Wildwood

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SEVIER COUNTY AREA, TENNESSEE
WEAR COVE QUADRANGLE
SHEET NUMBER 13 OF 15

Joins sheet 9, Walden Creek

Joins sheet 10, Pigeon Forge



Joins sheet 14, Gatlinburg

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

8	9	10	8 WILDWOOD 9 WALDEN CREEK 10 PIGEON FORGE
		14	14 GATLINBURG

INDEX TO ADJOINING 7.5 MAPS

WEAR COVE, TENNESSEE

7.5 MINUTE SERIES
SHEET NUMBER 13 OF 15

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

9	10	11
13		15

9 WALDEN CREEK
10 PIGEON FORGE
11 RICHARDSON COVE
13 WEAR COVE
15 MOUNT LE CONTE

INDEX TO ADJOINING 7.5 MAPS

GATLINBURG, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 14 OF 15

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

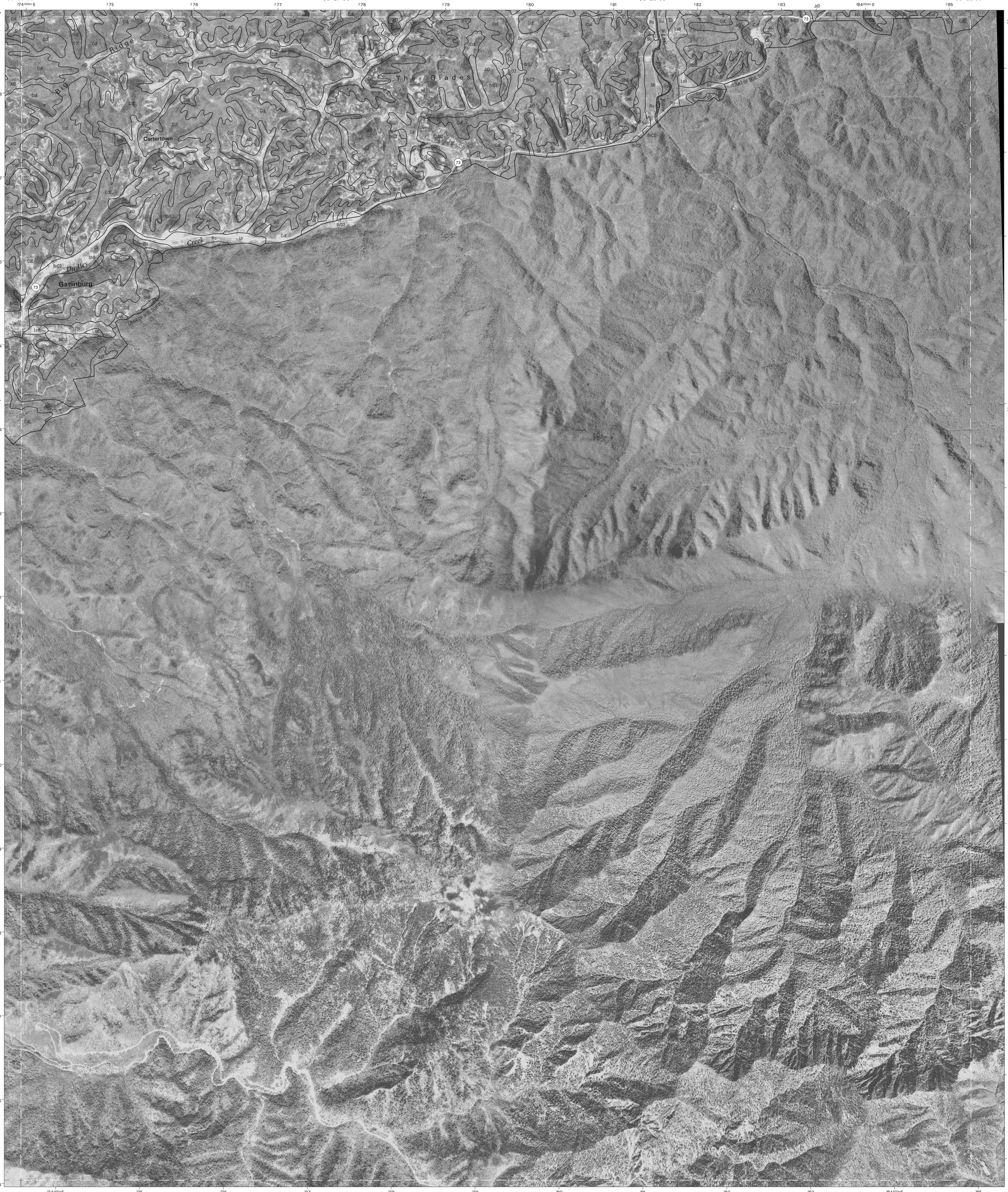
SEVIER COUNTY AREA, TENNESSEE
MOUNT LE CONTE QUADRANGLE (OVERSIZED)
SHEET NUMBER 15 OF 15

Joins sheet 10, Pigeon Forge

Joins sheet 11, Richardson Cove

Joins sheet 12, Jones Cove

Joins sheet 14, Gatlinburg



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

10	11	12	10 PIGEON FORGE 11 RICHARDSON COVE 12 JONES COVE 14 GATLINBURG
14			

INDEX TO ADJOINING 7.5 MAPS

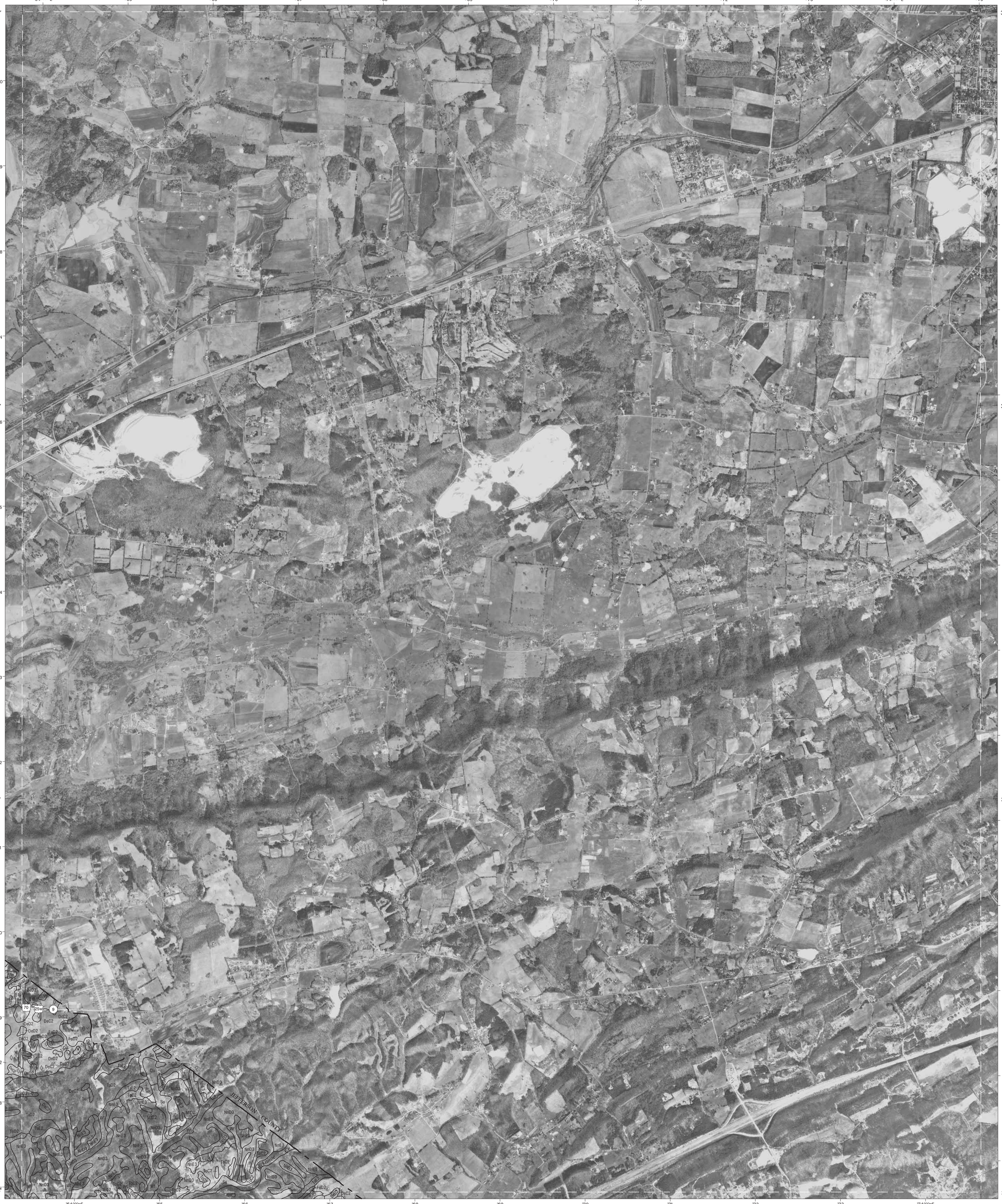
MOUNT LE CONTE, (OVERSIZED) TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 15 OF 15

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SEVIER COUNTY AREA, TENNESSEE
NEW MARKET QUADRANGLE
SHEET NUMBER 2 OF 15

83° 37′ 30″ — 83° 35′ 00″ — 83° 32′ 30″ — 83° 30′ 00″
36° 07′ 30″ — 36° 05′ 00″ — 36° 02′ 30″ — 36° 00′ 00″
264 000m E — 265 — 266 — 267 — 268 — 269 — 270 — 271 — 272 — 273 — 274 000m E — 275
4000 — 3999 — 3998 — 3997 000m N — 3996 — 3995 — 3994 — 3993 — 3992 — 3991 — 3990 — 3989 — 3988 — 3987 000m N



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

1		
4	5	6

1 MASCOT
4 BOYDS CREEK
5 DOUGLAS DAM
6 SHADY GROVE

INDEX TO ADJOINING 7.5 MAPS

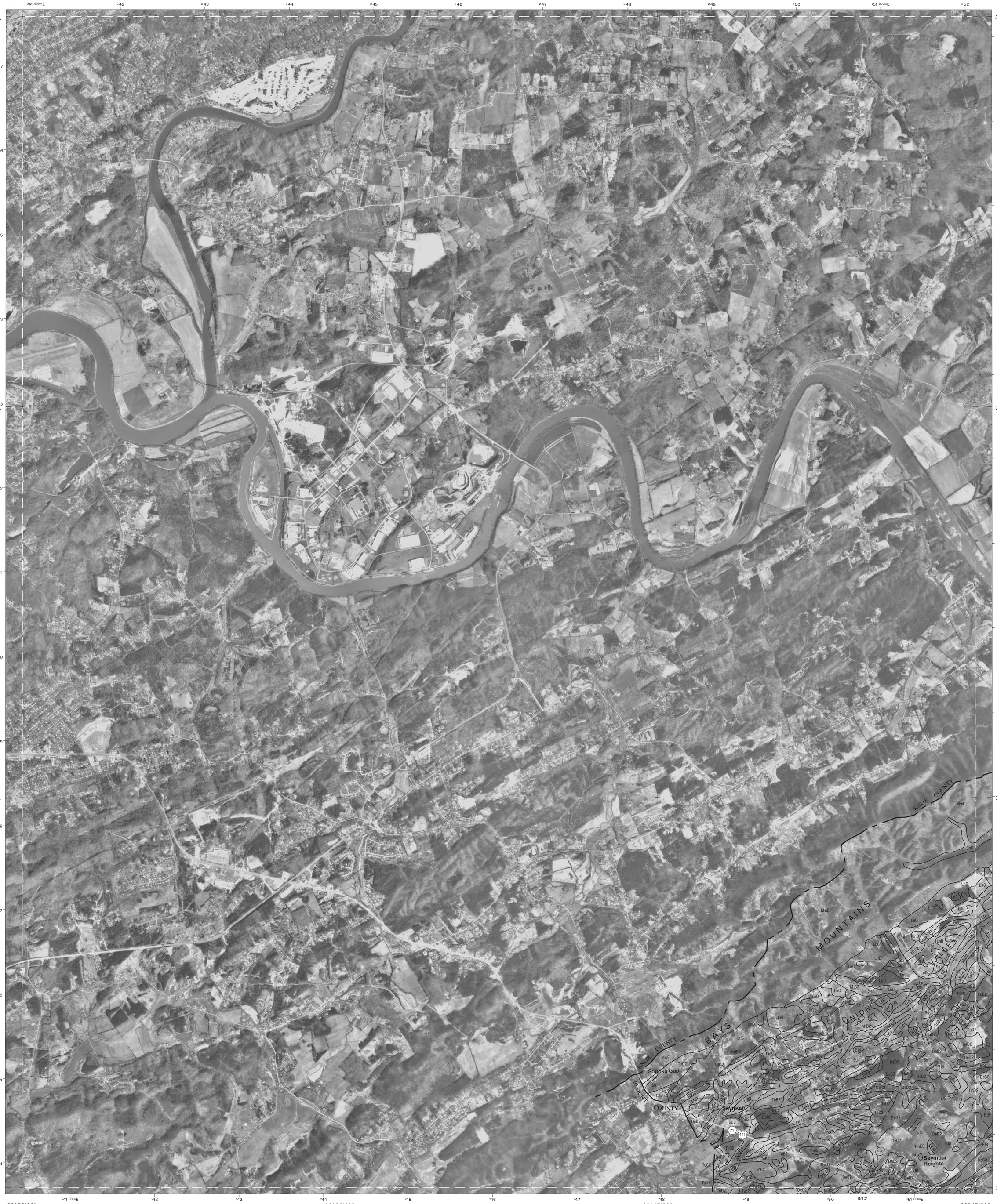
NEW MARKET, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 2 OF 15

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SEVIER COUNTY AREA, TENNESSEE
SHOOKS GAP QUADRANGLE
SHEET NUMBER 3 OF 15

Joins sheet 1, Mascot



Joins sheet 4, Boyds Creek

Joins sheet 8, Wildwood

Joins sheet 9, Walden Creek

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NORTH

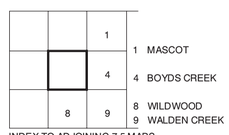
QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS



INDEX TO ADJOINING 7.5 MAPS

SHOOKS GAP, TENNESSEE

7.5 MINUTE SERIES
SHEET NUMBER 3 OF 15

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SEVIER COUNTY AREA, TENNESSEE
BOYDS CREEK QUADRANGLE
SHEET NUMBER 4 OF 15

Joins sheet 1, Mascot
Joins sheet 2, New Market
Joins sheet 3, Shooks Gap
Joins sheet 5, Douglas Dam
Joins sheet 8, Wildwood
Joins sheet 9, Walden Creek
Joins sheet 10, Pigeon Forge

83°45′00″ 83°42′30″ 83°40′00″ 83°37′30″
36°00′00″ 35°57′30″ 35°55′00″ 35°52′30″
E252 000m E253 E254 E255 E256 E257 E258 E259 E260 E261 E262 000m E263
3984 000m N 3983 000m N 3974 000m N 3973 000m N

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

	1	2
3		5
8	9	10

1 MASCOT
2 NEW MARKET
3 SHOOKS GAP
5 DOUGLAS DAM
8 WILDWOOD
9 WALDEN CREEK
10 PIGEON FORGE

INDEX TO ADJOINING 7.5 MAPS

BOYDS CREEK, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 4 OF 15

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SEVIER COUNTY AREA, TENNESSEE
DOUGLAS DAM QUADRANGLE
SHEET NUMBER 5 OF 15

Joins sheet 1, Mascot
Joins sheet 2, New Market
Joins sheet 4, Boyds Creek
Joins sheet 6, Shady Grove
Joins sheet 9, Walden Creek
Joins sheet 10, Pigeon Forge
Joins sheet 11, Richardson Cove

83°37′30″ 83°35′00″ 83°32′30″ 83°30′00″
36°00′00″ 35°57′30″ 35°55′00″ 35°52′30″
264000m E 265 266 267 268 269 270 271 272 273 274000m E
3983000m N

JEFFERSON COUNTY
APPROXIMATE BOUNDARY
SEVIER COUNTY
DOUGLAS DAM
DOUGLAS LAKE
FLAT CREEK
Tuckahoe Creek
Dumplin Valley
Dumplin Creek
Beech Springs
Union Grove
Millican Grove
Cutlersburg
McCresky Island
Buckingham Island
FRENCH BROAD RIVER
LITTLE PIGEON RIVER
Little Pigeon Creek
KNOBS
Roaring Creek
Millican Creek
SEVIERVILLE
66 139 338 40

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 0 1 KILOMETERS

1	2		1 MASCOT 2 NEW MARKET
4		6	4 BOYDS CREEK 6 SHADY GROVE 9 WALDEN CREEK 10 PIGEON FORGE 11 RICHARDSON COVE
9	10	11	

INDEX TO ADJOINING 7.5 MAPS

DOUGLAS DAM, TENNESSEE

7.5 MINUTE SERIES
SHEET NUMBER 5 OF 15

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 2, New Market

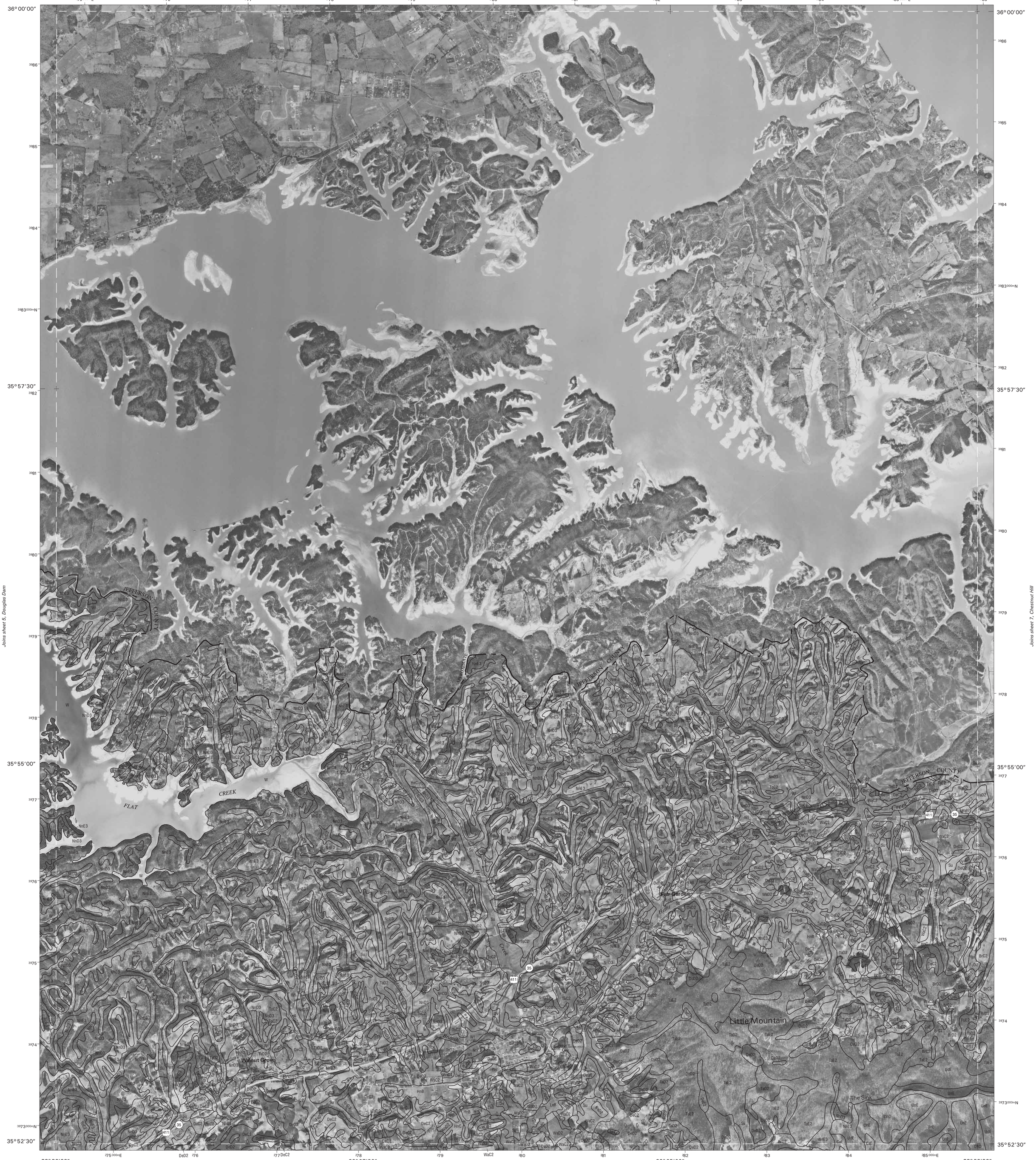
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SEVIER COUNTY AREA, TENNESSEE
SHADY GROVE QUADRANGLE
SHEET NUMBER 6 OF 15

83°30′00″ — 83°27′30″ — 83°25′00″ — 83°22′30″

275 000m E — 276 — 277 — 278 — 279 — 280 — 281 — 282 — 283 — 284 — 285 000m E — 286

36°00′00″ — 3986 — 3985 — 3984 — 3983 000mN — 3982 — 35°57′30″ — 3981 — 3980 — 3979 — 3978 — 35°55′00″ — 3977 — 3976 — 3975 — 3974 — 3973 000mN — 35°52′30″



Joins sheet 5, Douglas Dam

Joins sheet 7, Chestnut Hill

Joins sheet 11, Richardson Cove

Joins sheet 10, Pigeon Forge

Joins sheet 12, Jones Cove

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

2			2 NEW MARKET
5		7	5 DOUGLAS DAM 7 CHESTNUT HILL 10 PIGEON FORGE 11 RICHARDSON COVE 12 JONES COVE
10	11	12	

INDEX TO ADJOINING 7.5 MAPS

SHADY GROVE, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 6 OF 15

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SEVIER COUNTY AREA, TENNESSEE
CHESTNUT HILL QUADRANGLE
SHEET NUMBER 7 OF 15

83°22′30″ 83°20′00″ 83°17′30″ 83°15′00″
36°00′00″ 35°57′30″ 35°55′00″ 35°52′30″
286 000mE 287 288 289 290 291 292 293 294 295 296 000mE 297
3986 3985 3984 3983 000mN 3982 3981 3980 3979 3978 3977 3976 3975 3974 3973 000mN

Joins sheet 6, Shady Grove

Joins sheet 11, Richardson Cove

Joins sheet 12, Jones Cove

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 17. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000
FEET
1 0 1
KILOMETERS

6		6 SHADY GROVE
		11 RICHARDSON COVE
11	12	12 JONES COVE

INDEX TO ADJOINING 7.5 MAPS

CHESTNUT HILL, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 7 OF 15

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SEVIER COUNTY AREA, TENNESSEE
WILDWOOD QUADRANGLE
SHEET NUMBER 8 OF 15

Joins sheet 3, Shooks Gap

Joins sheet 4, Boyds Creek

Joins sheet 9, Walden Creek

Joins sheet 13, Wear Cove

83°52′30″ 83°50′00″ 83°47′30″ 83°45′00″

35°52′30″ 35°50′00″ 35°47′30″ 35°45′00″

241 000mE 242 243 244 245 246 247 248 249 250 251 000mE

3973 3972 3971 3970 000mN 3969 3968 3967 3966 3965 3964 3963 3962 3961 3960 000mN

Newell Station

BLOUNT COUNTY

APPROXIMATE

Boyds Creek

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

INDEX TO ADJOINING 7.5 MAPS

3 SHOOKS GAP
4 BOYDS CREEK
9 WALDEN CREEK
13 WEAR COVE

WILDWOOD, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 8 OF 15

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

SEVIER COUNTY AREA, TENNESSEE
WALDEN CREEK QUADRANGLE
SHEET NUMBER 9 OF 15

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

3	4	5
8		10
	13	14

3 SHOOKS GAP
4 BOYDS CREEK
5 DOUGLAS DAM
8 WILDWOOD
10 PIGEON FORGE
13 WEAR COVE
14 GATLINBURG

INDEX TO ADJOINING 7.5 MAPS

WALDEN CREEK, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 9 OF 15

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